



CITY AND COUNTY OF NEWCASTLE UPON TYNE.

ANNUAL REPORT

OF THE

MEDICAL OFFICER OF HEALTH

ON THE

Sanitary Condition of the City

DURING THE YEAR

1929.



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Members of Council who served on the

HEALTH COMMITTEE.

Councillor R. W. SIMPSON, M.B., Ch.B., Chairman.

Alderman DAVID ADAMS, J.P., Vice-Chairman.

The Lord Mayor (Councillor J. STEPHENSON, J.P.).

Alderman J. J. FORSTER, J.P.

„ WALTER LEE, J.P.

Councillor WALTER THOMPSON.

Councillor H. MOAT, Junr.

„ CATHERINE A. AULD.

„ A. LOUVRE.

„ W. C. PERCIVAL.

„ J. PEARSON.

„ J. CHAPMAN, J.P.

„ MAY NEWTON.

„ JOHN BARKER, J.P.

„ J. E. SCANLAN, J.P.

„ G. D. NEWTON, L.R.C.P.,

„ W. V. LONGFIELD.

L.R.C.S., Ed.

MATERNITY AND CHILD WELFARE COMMITTEE.

*Councillor JOHN CHAPMAN, J.P., Chairman.

* „ CATHERINE A. AULD, Vice-Chairman.

*Alderman DAVID ADAMS, J.P.

*Councillor G. D. NEWTON, L.R.C.P., *Councillor MAY NEWTON.

L.R.C.S., Ed.

* „ R.W.SIMPSON, M.B., Ch.B. †Dr. R. P. R. LYLE.

* „ WALTER THOMPSON. †Miss G. ROWELL.

* „ A. LOUVRE. †Mrs. E. M. WILLIAMSON.

‡ „ JEANIE L. GIBBIN, J.P. *Councillor H. MOAT, Junr.

* Member of the Health Committee.

† Co-opted member.

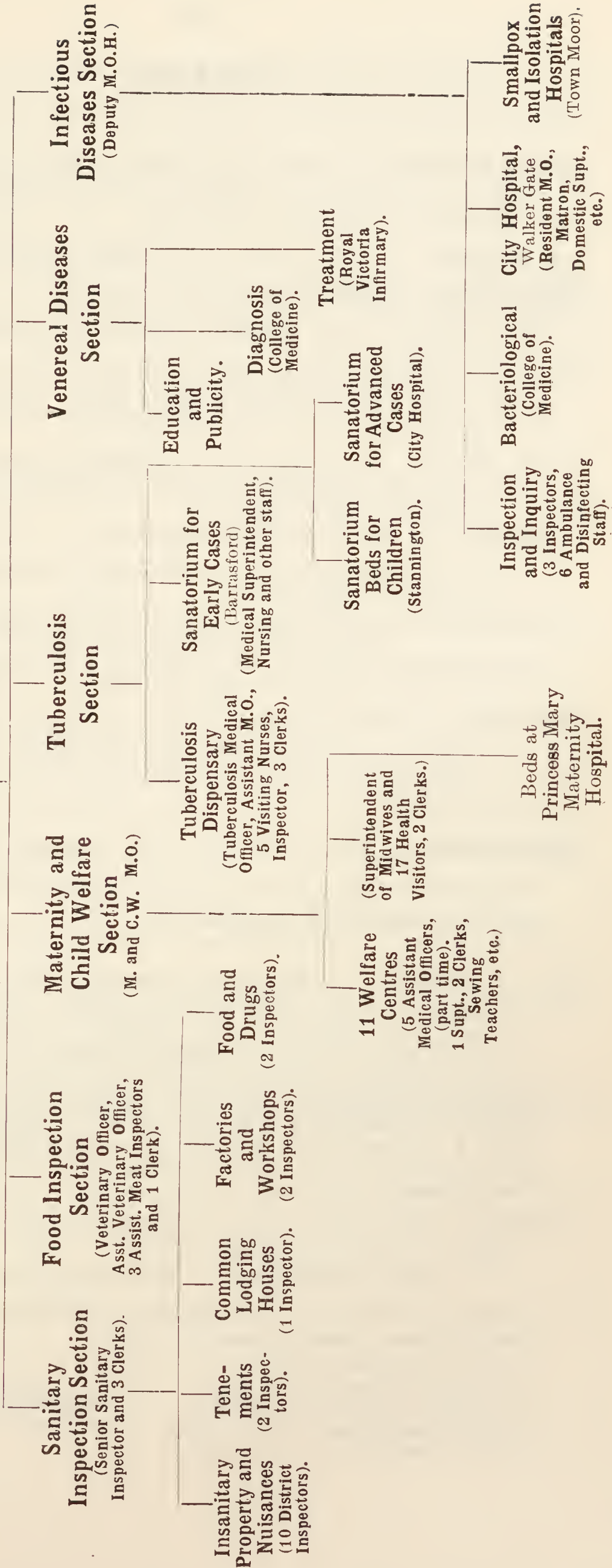
‡ Appointed by City Council.

Table showing the various Sections of the Health Committee's work which is under the direct charge of the Medical Officer of Health.

Medical Officer of Health.

Health Department

(Deputy Medical Officer of Health and 8 Clerks).



STAFF.

HAROLD KERR, O.B.E., M.A., M.D., Ch.B., D.P.H., Medical Officer of Health and Medical Superintendent of the City Hospitals for Infectious Diseases.

J. A. CHARLES, M.D., B.S., M.R.C.P., D.P.H., Deputy Medical Officer of Health.

CHRISTOPHER RAIMES, Senior Sanitary Inspector.

JAS. McNICHOL, Chief Assistant Inspector and Assistant Workshops Inspector.

ISAAC CLARK, Assistant Workshops Inspector.

JAS. HUNTER and **A. KIRSOP**, Assistant Inspectors under the Food and Drugs Acts.

W. F. BACON, **JAS. McKENDRY**, **L. W. JOHNSON**, **THOS. HESLOP**, **WM. GRAY**, **WM. E. PERKINS**, **J. BROWN**, **W. STEWART**, **M. SWALES**, **E. G. WINGATE**, District Inspectors

F. GALTON, **L. WADE**, Tenement Inspectors.

G. HARDIE (Retired, Nov.), **A. FLOCKHART**, Assistant Inspectors of Common Lodging Houses.

WM. BEAN, **D. WOOD**, **J. H. MACADAM**, Infectious Disease Inspectors.

JAS. ROBSON, **JAS. BRUCE**, **JNO. R. CRAGIE**, **J. W. ROBSON**, **THOS. MOORE**, **J. ROBSON, Junr.**, Ambulance Drivers and Disinfectors.

WM. MILNE, ***GEO. CUTHBERTSON**, ***ALFRED HEDLEY**, M.S.M., ***ALEC M. WALKER**, **JOS. GILHESPY**, **H. G. OLIVER**, ***ROBT. LAWSON**, ***D. MACPHERSON**, **R. DOBBIN**, **F. PELLATT**, **IVY GOODHALL** (Typist), Clerks in the Health Department.

(Those marked * hold the Sanitary Inspector's Certificate of the Royal Sanitary Institute).

THOS. PARKER, F.R.C.V.S., Veterinary Officer and Inspector of Provisions.

H. THORNTON, M.R.C.V.S., B.V.Sc., D.V.H., Assistant Veterinary Inspector.

JAS. M. ANDERSON, **W. COCKBURN**, **GEO. PHILLIPS**, Assistant Inspectors of Provisions. ***NORMAN DICKSON**, Clerk.

A. F. G. SPINKS, M.D., Maternity and Child Welfare Medical Officer.

a **GEORGINA B. CAMERON***, Chief Health Visitor and Supt. of Midwives.

f **CATHERINE M. THEXTON†**, **b** **MARIAN MOODY***, **c** **LIZZIE ISA PRITCHARD**, **c** **LOUISE SHELL**, **d** **FLORENCE MARTHA HATFIELD***, **b** **MARY I. WIGHAM** (Resigned, March), **d** **HILDA MORTON***, **d** **NORAH B. WILLSON***, **d** **M. T. SMITHSON*** (Resigned, March), **b** **E. JOHNSON***, **b** **N. E. CARR***, **b** **E. HISCO***, **d** **T. MASON***, **b** **E. M. HASTIE***, **d** **C. R. WORRALL***, **b** **J. POTTINGER***, **b** **N. LEWIS**, **b** **M. A. SIMPSON*** (Appointed, March), **b** **M. L. NICHOLSON*** (Appointed, July), Health Visitors. **EDITH RODGERS**, **MARION S. BATT**, Clerks.

(Qualifications of those marked **a** C.M.B., General and Fever Nursing and R.S.I. Certificates. **b** C.M.B., General Nursing and R.S.I. **c** C.M.B. and R.S.I. **d** C.M.B. and General Nursing. **f** C.M.B., Fever Nursing and R.S.I.).

* State Registered Nurse. † State Registered Fever Nurse.

ANNIE G. BAINBRIDGE, Superintendent of Welfare Centres.

AMY RODGERS, **GLADYS PATTISON**, Clerks.

H. GLEN DAVISON, M.D.

L. MABEL R. CAMPBELL, M.B., Ch.B.

H. HARVEY EVERS, M.B., F.R.C.S.

JAS. C. SPENCE, M.D., B.S., F.R.C.P.

F. J. NATTRASS, M.D., B.S., M.R.C.P.

} Assistant Medical Officers (part time), Welfare Centres.

G. HURRELL, M.D., B.S., B.Hy., D.P.H., Tuberculosis Medical Officer.

I. M. McLACHLAN, M.D., B.S., B.Hy., D.P.H., Assistant Tuberculosis Medical Officer (Resigned, April).

T. L. J. COXON, M.B., B.S., B.Hy., D.P.H., Assistant Tuberculosis Medical Officer (Appointed, May).

WM. H. DICKINSON, O.B.E., M.D., F.R.C.P., (E.), Ch.B., D.P.H., Tuberculosis Medical Officer (part time).

c **CONSTANCE M. BAYNE**, **d** **ANNIE BOOTH**, **a** **W. E. DALE***, **b** **J. P. KENMIR***,

e **E. FARBRIDGE*** (Resigned, September), **f** **M. YOUNG** (Appointed, September), Tuberculosis Visiting Nurses.

(Qualifications of those marked **a** General Nursing. **b** General Nursing, C.M.B. and R.S.I. **c** General Nursing and Health Visitors and School Nurses Certificates of R.S.I. **d** Fever Nursing. **e** General Nursing and C.M.B. **f** Fever Nursing, C.M.B.)

* State Registered Nurse.

A. FRENCH, Assistant Inspector.

GEORGE MAGNAY, **PAMELA E. THORATT**, **GERTRUDE GILLENDER**, Clerks.

C. G. R. GOODWIN, M.R.C.S., L.R.C.P., Medical Supt., Barrasford Sanatorium.

FRANCES BAGULEY, A.R.R.C., Matron; Sister, Nurses, Servants.

J. W. HUNTER, M.D., Ch.B., B.Hy., D.P.H. Resident Medical Assistant, City Hospital for Infectious Diseases (Resigned, July).

E. PORTEUS, M.B., B.S., Resident Medical Assistant (Appointed, August).

W. FRANK WILSON, M.B., B.S., Consulting Oto-rhinologist, City Hospital for Infectious Diseases.

H. E. COOK, Matron, City Hospital for Infectious Diseases (Resigned, Nov.).

J. L. WATT, „ „ „ „ (Appointed, Dec.).

A. M. STEEDE, Domestic Superintendent, City Hospital for Infectious Diseases (Appointed, December).

JESSIE LAING, Assistant Matron. Sisters, Nurses, Clerks, Servants.

M. BURRILL, Dispenser.

JAS. COCKBURN, Engineer (Died, August), **GEO. COCKBURN**, Engineer (Appointed, October).

J. SAUNDERSON, Assistant Engineer (Appointed, November).

HERBERT BLACKTIN, **FRANK HARRINGTON**, Lodge Keepers, City Hospital for Infectious Diseases. Firemen, Porters, Gardeners, Joiner, and Handyman.

JOS. W. and **JANE STEPHENSON**, **MATTHEW** and **ISABELLA ROBSON**, Caretakers at Smallpox and Isolation Hospitals.

**To Councillor R. W. SIMPSON, M.B., Ch.B.,
etc., Chairman of the Health Committee of
the Corporation of Newcastle upon Tyne.**

SIR,

1929 was characterised by a continuance of the depressed conditions which existed in the previous year.

Shipbuilding on the Tyne showed a decline of three vessels (slightly over 31,000 tons), although on the North East Coast as a whole 54 vessels were built in excess of the number for 1928.

The coal trade improved somewhat during the year, which closed with considerably brighter prospects than did 1928.

The cost of living figure fell one point during the year, being at the close 67 per cent. above the pre-war rate.

Male unemployment, from information kindly supplied by the Manager of the Labour Exchange, fell from 18,228 in January to 16,243 in December. In December, 1928, it stood approximately at 17,298. Unemployment amongst women declined from 2,126 in January to 1,449 in July, but rose steadily each month subsequently, until it stood at 2,262 in December.

Relief disbursed by the Board of Guardians amounted for the year ending 31st March, 1929, to £336,601, as against £383,460 in 1928, and £486,374 in 1927. The reduction indicates rather the amount of the sums granted than the number of claimants.

The Hospitals and other charities in the City have again been hard hit, and are clamouring for increased support.

From 14th May to 19th October the North-East Coast Exhibition ran its course at the Recreation Ground on the Town Moor, in a brave attempt to give a stimulus to trade and attract business. From first to last the Exhibition had four million visitors, and the constant bustle and movement resulting from the steady flow of visitors to the town did much to brighten it, and counteract any gloom that the continued slump might have produced. What the ultimate effect of the Exhibition may be time alone will tell. Even if it did nothing more than stimulate optimism and gladden our outlook, it will have helped us immensely. Incidentally, it paid its own expenses, which were considerable.

The opportunity was taken to hold a Health Week, one incident of which was a Child Welfare Exhibition, which attracted some 300,000 visitors, in the large *Evening World* Pavilion at the Exhibition. A Provincial Sessional Meeting of the Royal Sanitary Institute was also held in the Festival Hall at the Exhibition. There were some 400 delegates, and the subjects dealt with were Maternity and Child Welfare, Milk, and Smoke Pollution. A public lecture on Smoke Pollution, which was very well attended, was given in the City Hall at night by Professor Sir Leonard E. Hill, of the National Institute for Medical Research. The subjects were topical, and all matters of great interest at the present time.

In October the National Association for the Prevention of Tuberculosis held its Annual Conference in Newcastle, instead of as usual in London. It was attended by 350 delegates, and the programme was of unusual interest, especially to us in Newcastle.

CLIMATE.—1929 was an exceptionally dry year, with 17·028 inches of rain, which fell on 120 days. January was the wettest month, with 2·856 inches, and March the driest month with 0·42 inches recorded in one day. In February there was a prolonged and exceptionally severe frost, lasting the whole month. The summer was a particularly fine and long one.

Sunshine Records were reported by Professor Todd from Armstrong College, and by Professor Heigham from Cockle Park, just beyond Morpeth. At Armstrong College there were 1,211 hours of sunshine, as compared with 1,169 hours in the previous year, while at Cockle Park there were 1,566 hours, as compared with 1,406 in 1928. The City therefore had again only three-quarters of the sunshine that penetrated into surrounding country districts.

The only satisfactory method of dealing with *atmospheric pollution* is by the joint action of all the Local Authorities in the district. The attempt to form a Regional Committee, as reported last year, completely failed.

The atmospheric pollution gauges recorded an even heavier deposit than in 1928, being equivalent to no less than 1,117 tons per square mile in the City Road gauge, as compared with 839 tons in the previous year; 468 at Westgate Cemetery, as compared with 446 in 1928, and 254 at the Smallpox Hospital on the Town Moor, as against 269 in 1928.

The record at the City Road station is easily the highest for any one gauge in the whole country. It is now pretty well recognised that it is really largely a measure of our own iniquities in that it receives the grit and other solid matter from the neighbouring Tramways Power Station chimney. Accordingly, it was decided

to instal the gauge in a similar industrial area, further to the east, in the St. Lawrence district, and this one recorded the equivalent of only 340 tons per square mile. Almost one-half of the City Road downfall was ash and incompletely burnt fuel; in the St. Lawrence area ash comprised two-thirds of the total deposit. Tar amounted to the equivalent of 58 tons per square mile, and four tons, in the City Road and St. Lawrence areas respectively. It is thus evident that furnaces in the St. Lawrence area perform their work of combustion much more completely than about the Manors. At Westgate Hill, which is mainly a residential district, and where one would expect less complete combustion, about one-half of the deposit consists of ash, tar amounting to the equivalent of seven tons per square mile. On the Town Moor the deposit consists as to little more than half its bulk of ash, while tar amounts to the equivalent of two and a half tons per square mile. It is thus seen that at the City Road gauge the figures indicate not only an excessive amount of deposit, but grossly incomplete combustion. Many representations have been made to the Manager and Engineer of the Tramways, and they have done everything in their power to mitigate the nuisance from their chimney. An explanation of its continuance is that the work is always growing, and consequently making ever-increasing demands upon the boilers. To meet this the furnaces were constantly overloaded, and as a result could not do their work efficiently. Powerful forced draught having been installed to increase combustion, the heavy smoke that was produced has now largely ceased, but the ashes and cinders are blown up the chimney. The Electricity Board are about to absorb the Tramways Power Station, in consequence of which the Transport and Electricity

Committee cannot see its way to recommend the expenditure of the very large sum of money that would be required to remodel its existing plant. Therefore for the next year or two it would appear that there is no complete remedy to be obtained for the City Road nuisance.

The use of smokeless fuel is slowly but steadily increasing in Newcastle, quite a considerable number of householders now burning coke instead of raw coal. This, lighted by gas burners placed below the grate, is convenient and labour saving. The resultant fire very speedily becomes incandescent throughout, without the black portions that are seen in a raw coal fire, and the radiant heat is consequently very much greater. Having adopted coke throughout in his own house, your Medical Officer has found it cleaner, less trouble, and infinitely more efficient than raw coal. Further, neither smoke nor perceptible fume is produced, while the cost of gas and fuel together show a 10 per cent. reduction on the previous year's experience with coal. This takes no account of the quite definite economy from having no kindling wood to provide.

On the 27th of March, 1929, the Local Government Act, 1929, received the Royal assent, and throughout the year preparation was being made for its coming into force "on the appointed day," 1st April, 1930. In anticipation of the delegation to the Health Committee of all the Guardians' functions in connection with health, a scheme was under consideration for the administration of the Wingrove Hospital, and negotiations were in active process with representatives of the Voluntary Hospitals Representative Committee to ensure co-ordinate working with the other institutions in the City. A Memorandum on the subject, a copy of which is appended

to this report, was prepared by the Medical Officer of Health, and its suggestions were ultimately very largely adopted.

The Registrar General estimated the **POPULATION** during 1929 to be 283,400, as against 281,500 in the previous year, and the Census of 1921, which showed 278,400.

The number of **MARRIAGES** during the year 1929 was 2,271, which is 76 more than in 1928, and much about the same as in the previous years.

The **BIRTH RATE** fell to 18·1 births per 1,000 population, as against 19·2 in 1928. That for the whole country was 16·3. Newcastle's birth rate was the lowest yet recorded for the City.

The **GENERAL DEATH RATE** was 13·8 per 1,000, as compared with 13·1 in 1928. It was 13·4 for England and Wales, and 13·7 for the great towns.

The *Natural Increase* of population (births minus deaths) was 1,227.

A broad analysis of the causes of death shows that diseases of the **Circulatory System** constitute a steadily growing class, which in 1929 accounted for over 23 per cent. of the total deaths, as against 21 per cent. in the previous year. These were caused by rheumatism, by stress and strain, and by late effects of such racial poisons as syphilis and alcoholism.

Respiratory Diseases caused nearly 15 per cent. of all deaths in 1929, as against 13 per cent. in 1928.

Diseases of the Nervous System claimed 8 per cent. of the total deaths, as compared with 9 per cent. in the three preceding years.

Diseases of the Digestive System caused about 6 per cent. of the total deaths, which is a comparatively low proportion. There was less than half the number that was recorded in 1914.

Cancer deaths showed a slight decrease, there having been 389, as compared with 420 in 1928. They constituted 10 per cent. of the total deaths in the City. In 131 cases the disease affected the stomach or liver, and in 98 the intestines; that is to say, in more than half the deaths the part affected was the digestive tract; in 59 cases the female genital organs or breast were involved; other organs in 71, and in 30 some part of the mouth. 217 deaths occurred in males and 172 in females, thus reversing the usual sex incidence. The average age at death was 63 for males and 60 for females.

There was constituted in the autumn the North of England Council of the British Empire Cancer Campaign, which opened on October 17th, under the auspices of the College of Medicine and of the various Corporations and County Councils of the Northern Counties, and with the strong support of large employers, friendly societies, private individuals and the medical profession. Its purpose is to raise funds for various purposes relating to the disease, such as to provide for research, for treatment, and for the setting up of a *Radium Institute* in Newcastle for the North of England. Local Committees have been established in 14 districts, and much hard work has been accomplished with a fair amount of success.

Diabetes accounted for 28 deaths, including two under two years and two between 15 and 25 years. There were 35 deaths in 1928. Since 1923, when *Insulin* was first made available for treatment, there have been five deaths under 2 years, two between 5 and 15, and

four between 15 and 25, whereas in the seven preceding years there was one death between 2 and 5 years of age, ten between 5 and 15, and 18 between 15 and 25. Insulin is not a cure, but supplements the defective function of the pancreas during its administration, which therefore has to be continuous.

EPIDEMIC AND INFECTIOUS DISEASE incidence was again low, and in respect of this the year has been very healthy.

There were 21 cases of **Smallpox**, as compared with 76 in 1928. All were of the so called mild type, and there were no deaths. Several suffered from quite severe attacks which, though not fatal, caused the patients to be very ill indeed. 15 of the patients had never been vaccinated, six had been vaccinated in infancy only, and the earliest occurrence of the disease subsequent to vaccination was after 50 years. The disease is easily handled if taken promptly, and all known contacts vaccinated. This was done in every instance, and the refusal of the proffered protection is almost unknown in Newcastle. People are almost invariably amenable to reason.

Infantile vaccinations fell from 75 per cent. to 64 per cent. in the Newcastle Union, which does not include Walker. In Walker the percentage vaccinated, which for 1928 was 83, declined in 1929 to 78 per cent. of births. It is regrettable that a decline should be noted, but it was only to be expected with the gradual disappearance of smallpox from the district.

Measles occurred in mild epidemic form from January to April, being a continuation of the outbreak which appeared in the previous November and December. There were 74 deaths, representing a case mortality of 1.9 per cent. of the cases notified. Health Visitors

attended at 94 per cent. of the patients' homes to ensure that doctors' orders were being carried out, and to trace other unnotified or suspected cases on whom a doctor ought to be in attendance.

Whooping Cough, that scourge of young child life, shows a substantial diminution from 50 deaths in 1928 to 27 deaths (0·09 per 1,000 of population) in 1929.

Influenza and Pneumonia accounted for 457 deaths, as against 330 last year. 33 per cent. of the deaths occurred below the age of five years. 1,372 cases of pneumonia, including influenzal pneumonia, were notified, and 89 per cent. of these were visited by the Health Visitors. Influenza was most prevalent in the latter part of February, but cleared up with the occurrence of fine bright weather in the first week of March.

The incidence of **Diphtheria** remains about the same as in the previous year, with 259 cases as against 262 in 1928, which latter was the highest figure since 1921. The type of disease was rather more severe, and the case mortality rose from 3·1 to 5·4 per cent. It has not been felt advisable as yet to introduce wholesale child immunisation, but this will be resorted to should indications point to its expediency. Meanwhile all children admitted to the City Hospital suffering from other diseases than diphtheria are immunised against that disease, the consent of the parents being obtained when the child is removed from its home.

Scarlet Fever shows a slight rise in 1929. There were 584 cases with five deaths (0·02 per 1,000 population), as against 506 cases with two deaths in the previous year.

Enteric Fever (typhoid and para-typhoid) is appearing a little more frequently. It was seen in 36 instances, as compared with 26 in 1928; 13 patients at the Royal Victoria Infirmary, 3 at the Fleming Memorial Hospital, and one at a nursing home, were from areas outside Newcastle. Of the 19 Newcastle cases, four died, together with one of the outside area patients. One of the City cases was a member of the nursing staff of the Royal Victoria Infirmary. She suffered a severe attack, but happily recovered. There were two well defined outbreaks, one in February and one in March. The first comprised 12 cases (four fatal) of para-typhoid fever, centred upon two female surgical wards at the Royal Victoria Infirmary, and the second involved five cases with two deaths, and originated from mussels gathered in the River Blyth.

Protection of the staff by inoculation with T.A.B. vaccine has long been a routine procedure at the City Hospital, and has now been adopted similarly at the Royal Victoria Infirmary and some of the other hospitals. That it is efficacious our experience in the past 15 years amply demonstrates. In the same way the staff at the City Hospital has been protected against diphtheria for the last four years, and against scarlet fever for two and a half years, with the result that since the adoption of each of the procedures there has not been a case of these diseases amongst those inoculated. This has been a great boon to the hospital in saving it the cost and inconvenience of the previous frequent occurrences, more particularly of scarlet fever, and to the staff itself, by the avoidance of the unpleasantness, danger and occasional permanent damage to health caused by an attack of any of these ailments.

Diarrhœa caused 93 deaths, of which 66 were all children under two years of age. This number is a

decrease upon that of the previous year (116), and falls very far short of the incidence of 20 years ago.

Dysentery was discovered and proved bacteriologically in 123 persons, 10 of whom belonged to outside areas, and there were four deaths. 101 of the patients were admitted to the City Hospital. Two small hospital outbreaks of the disease occurred, one in the City Hospital diphtheria ward, where there were seven cases of mild type. The infection was almost certainly introduced by a diphtheria patient who was also a dysentery carrier. The other occurred in the Fleming Memorial Hospital, where there were five cases. These originated from a patient admitted with indefinite signs of gastro-intestinal disorder. Dysentery was most prevalent during spring and summer, but was present throughout the year.

Prolonged enquiries failed to discover that infection had in any case originated from a carrier who had acquired the disease on foreign service. The only outstanding features were that dysentery did not occur to any extent in infants under one year ; that it was commonest in children from 1 to 2, most dangerous between the ages of 5 and 15, that girls, on the whole, escaped infection to a greater extent than boys, and that the latter were generally more severely affected.

Bacteriologically the cases were found to be caused by *Flexner Bacillus* (87 cases) ; *Sonne Bacillus* (32 cases) ; and the *Newcastle Bacillus* (4 cases).

DR. CHARLES is studying the nature and history of dysentery in Newcastle. He comes to the conclusion that the disease has always been present in this country, and that during the 18th century Newcastle was a veritable hot-bed for it, while in the 19th century it appeared frequently in the records of the Newcastle

Dispensary. This present outbreak, which has now been with us for two years, is merely a recurrence. The elimination of the disease is therefore a matter for very careful research and observation.

There were no cases of **Food Poisoning** reported.

Acute Poliomyelitis, or infantile paralysis, was notified in seven cases. No deaths occurred. There were 15 cases of **Cerebro Spinal Fever**, with 14 deaths, and 12 of **Encephalitis Lethargica** ("sleepy sickness"), of whom four died. All known recovered cases are sought out every year to ascertain their after-history. Since 1919 there have been 337 notifications, and 157 cases were admitted to hospital. Of 267 whose history it has been possible to ascertain, 130 are known to be dead, 44 to be totally incapacitated, 16 have after-effects which interfere with their usual occupation, and 33 with more or less serious after-effect, but not preventing their continuance at their trades. 44 are believed to have been cured. A number of them have been or are in mental hospitals, others form a serious problem for Mental Deficiency Committees, and many others constitute a grave burden for their parents or friends. The disease is a terrible one, perhaps the most to be dreaded of all, and its cure is not yet known.

Reference is made to **Tuberculosis** under a special heading subsequently.

Hospitals for Infectious Diseases.—To the *City Hospital*, Walker Gate, with its approximate 338 beds, were admitted 1,713 cases of fever, etc. and 303 cases of pulmonary tuberculosis. On May 1st, 1929, a new ward block was opened in the tuberculosis section for 44 female patients. This was designed to accommodate the patients who had been placed in one of the temporary

ward blocks erected during the war on the east side of Little Benton Road, and leaves the latter free for fever cases, as originally intended. The removal of the pulmonary tuberculosis cases from the Poor Law General Hospital since its change over to the Health Department again necessitates additional accommodation at Walker Gate, and there is little doubt that another ward will have to be built immediately in the tuberculosis section. During the year also the last of the large pavilions on the fever side was equipped with a verandah for the outdoor treatment of patients. This is an immense advantage to the Hospital, and the addition of a second verandah to each ward has now been commenced with.

To the fever side were admitted 543 cases of scarlet fever, of whom four died, with a case mortality of 0·7 per cent., as compared with 3·1 per cent. during the quinquennium 1891-5. 219 cases of diphtheria were admitted to the hospital, and there were 12 deaths, with a case mortality of 5·5 per cent., as compared with 28·3 in the same quinquennium. There were 38 cases of the enteric group fevers, with a case mortality of about one in four. There are very many less cases of enteric nowadays than previously, so that comparison is difficult.

31 per cent. of the cases of scarlet fever admitted were rather more severe, and were treated with scarlet fever anti-toxin. This definitely shortens the stay in Hospital of severe cases and clears them up and prevents complications. It is, in fact, indispensable in the treatment of scarlet fever.

DR. FRANK WILSON, the visiting Oto-Rhinologist, operated upon one patient (mastoid), who recovered completely. The number of patients requiring operation for tonsils and adenoids and for mastoids was very much

smaller than in previous years, partly, no doubt, owing to the use of anti-toxin. The average stay in hospital for cases of scarlet fever was 29·7 days. The return case rate was 5·3 per cent.

The importance of the promptest possible medical attention to any child displaying throat symptoms cannot be too strongly insisted upon. Diphtheria anti-toxin should be inoculated immediately, without waiting for the diagnosis from a swab by the Bacteriologist. Delay may easily make all the difference between recovery and death in a case of diphtheria.

100 members of the nursing and domestic staff suffered from various illnesses, none of them preventable by inoculation. There were 1,445 days lost duty-time through ill-health. There was no case of scarlet fever, diphtheria, or enteric fever amongst the staff, nor, as already stated, has there been since preventive inoculation was first undertaken. Other diseases than these three are admitted to the hospital according to circumstances, and in 1929 these included 222 cases of pneumonia, of whom 38, or 17 per cent., died; 108 measles (including 5 rubella), of whom 14, or 13 per cent., died; 85 erysipelas (8 deaths); 12 chicken-pox, 4 encephalitis lethargica, 10 cerebro-spinal fever, 104 gastro-intestinal conditions other than enteric fever, 21 whooping cough and 9 ophthalmia neonatorum. The cases of pneumonia are admitted for the prevention of spread of the disease to others, and in the interests of sufferers whose home conditions are not favourable to the care and nursing that is their chief need.

The **Tyne Port Sanitary Authority** has sent all its fever cases to the City Hospital. These numbered five in 1929 and two in 1928.

The **Smallpox and Isolation Hospitals**, with 72 and 100 beds respectively, were in occupation more or less continuously throughout the year for 46 patients. Of these 25 were found to be suffering from diseases other than smallpox. All the patients recovered. There were 145 contacts admitted to the Isolation Hospital, their stay being only very temporary in most cases, merely to permit of the thorough disinfection of their homes.

Bacteriological Examinations.—6,967 specimens for examination were submitted to the Department of Bacteriology of the College of Medicine. This is the highest number of examinations carried out in any year. Of these 2,426 were in respect of diphtheria, tuberculosis and enteric fever, 2,833 were for venereal disease, 764 were of milk, 208 of water, and the remaining 736 were special investigations.

The **Disinfecting Stations** at Walker Gate and at the Moor Hospitals dealt with 41,890 articles from the City and the hospitals.

The total amount spent by the Health Department on chemical disinfectants (formalin, izal, etc.), only amounted to £35, of which £14 was for the hospitals.

The **Venereal Disease** clinic at the Royal Victoria Infirmary, under PROFESSOR SIR ROBERT A. BOLAM, Chief Specialist Medical Officer, dealt with 988 new cases in 1929, including 308 syphilis, 529 gonorrhœa, 3 soft chancre, and 148 conditions not venereal. These attended on an average 15·3 times, as against 15·4 in the previous year. 38 per cent. of patients ceased their attendance before the completion of treatment.

Ophthalmia Neonatorum (inflammation of the eyes in the newly born, and usually due to gonorrhœal infection from the mother), was notified in 72 instances, of

whom two were in hospitals. There were 70 cases in the previous year. 70 were visited by the Health Department, and 68 are known to have recovered completely, two being lost sight of.

There are 522 registered blind persons in Newcastle to-day, and of these 80 are stated to have been blind from birth, but only one of them is under five years of age, which may be considered satisfactory proof of the efficiency with which ophthalmia neonatorum is looked after.

The three **Police Women** attached to the establishment at the Central Police Station are employed chiefly as matrons, but are available for patrol and other duties.

MATERNITY AND CHILD WELFARE.—The Maternity and Child Welfare Section, under DR. A. F. G. SPINKS, has been endeavouring to cope with the needs of the new housing estates of the Corporation at High Heaton, Walker, Pendower, Two Ball Lonnen and Cowgate. It has been found impossible for the existing staff of Health Visitors to get to the children born in these areas as regularly as is requisite, and for the mothers in them to bring their babies to the welfare centres, usually a very long distance away. This difficulty since then has been dealt with by a report of the Health Committee, approved by the Council, recommending the opening of three new welfare centres (making 14 in all), and the addition to the staff of nine health visitors (making 27 in all) in order not only to serve adequately the new housing areas, but also to undertake more thoroughly the care of all pre-school children, and to link up effectively with the school medical service, making the two continuous. When put into effect these proposals should add immensely to the efficiency of the section.

The birth rate has fallen slightly, and stands at 18·1 per 1,000 population, which is the lowest on record for Newcastle, as compared with 19·2 in 1928 and 33·4 in 1900—when it was already declining. The infantile mortality rate rose from 82 deaths per 1,000 births in 1928 to 85 in 1929, the second lowest rate on record for the City.

Special attention has been devoted during the year to the problem of maternal mortality. There were 5,057 confinements among City women, and of these 30 mothers died in the process, a death rate of 5·9 per 1,000. This is the highest maternal mortality that we have experienced in Newcastle since 1894, that for the country as a whole being 5·82. For a number of years the Newcastle mortality rate was equivalent to little more than half the national. Both our figures for 1929 and for 1928 show a definite retrogression. In 1929, 11 were due to sepsis—puerperal fever—the commonest cause of death in childbirth and the most baffling; two were from accidents of pregnancy, five from other accidents of childbirth, and six from puerperal albuminuria and convulsions (eclampsia), all of which are conditions that are usually susceptible of prevention.

During the past autumn and winter a committee of doctors, members of the Newcastle Division of the British Medical Association, have been endeavouring to formulate some scheme of action that will have the effect of counteracting the adverse influences which bring about these deaths in childbirth. The British Medical Association as a whole has also formulated a scheme which includes a National Maternity Service. The Departmental Committee on Maternal Mortality has just submitted its first (interim) Report. Its recommendations coincide fairly closely with those of the British Medical Association, and include the provision

for every lying-in woman of (1) services of a qualified midwife and a doctor, (2) ante-natal and post-natal attention and care, with attendance during pregnancy, labour and subsequently where necessary, (3) consultant services at any stage of pregnancy, labour and the puerperium, (4) hospital accommodation as required, and (5) adequate arrangements for transport, for sterilised equipment and for the accouchment and labour facilities. That Parliament will implement some, at least, of these recommendations is only to be expected. This will add considerably to the cost of the Maternity and Child Welfare Service, but if it has the desired effect, as it surely will, of preventing some of these tragic occurrences, it will be well worth it.

It is upon the same lines that our preventive work in Newcastle has been built up. Considerable attention has been given to the ante-natal centres, of which there are now seven, in addition to the one that is conducted by and at the Princess Mary Maternity Hospital. Of the 5,057 women who were confined in 1929, 1,348 attended 3,931 times at the municipal ante-natal centres. To these must be added the expectant mothers who receive ante-natal care from their private doctors, probably about 11·0 per cent. From this it will be seen that in Newcastle at least we have travelled a very long way towards the discovery of defects and the thwarting of their influence upon childbirth.

Confinements are approximately evenly divided in Newcastle between private doctors, midwives, and the Maternity Hospital. There were 45 practising midwives in the City, three only remaining of those registered as having been in *bona fide* practice before the passing

of the Midwives Act. They receive regular supervision and tuition by the Superintendent of Midwives, Miss GEORGINA B. CAMERON.

Everything possible is done to insist upon the importance of all expectant mothers receiving skilled examination and advice several times prior to the actual confinement. Doctors for the most part realise the principle and carry it out. The midwives are instructed to ensure that all women who book with them are examined either by a private doctor or at an ante-natal centre. There is still, however, a proportion of women who do not appreciate how essential such an examination is for their safety, and who will not take the trouble to obtain it.

Up to the present the ante-natal centres are conducted by obstetrical and gynæcological specialists, so that the women who resort to them get the most skilled attention that it is possible to obtain. There is, however, a limit to the work that can be undertaken by the few specialists available. It has been proposed that private practitioners themselves should function at the centres, with a specialist in attendance for reference, and the Maternity and Child Welfare Committee agreed that this should be tried as an experiment at one centre. It has not yet been possible, however, to get the proposal working. It is undoubtedly advisable that every pregnant woman should be assured of such medical care, and the recommendation of the Departmental Committee is that women should engage a midwife as early as possible in pregnancy, and at the same time indicate the doctor to whom they should go for overhaul, and he would act as a standby to attend, if necessary, at the actual confinement and after it. This would ensure not only that the expectant mother would have proper medical super-

vision, but also, what is equally important, that she would have skilled nursing help, instead of, as in so many cases, the attendance of an unqualified and ignorant handywoman.

In Newcastle in 1929 doctors were sent for by midwives on account of complications or emergency at confinements in 408 instances. Arising out of this there were 300 claims from doctors for fees amounting to £381, and four from midwives for £3 10s. 0d., under the Midwives Act, 1918. Each case was closely investigated before payment was approved.

It will have been noted also that the Departmental Committee recommends provision of specialist help to be available, if necessary, not only after the actual labour, as it is now, but at all stages of the pregnancy and confinement.

The question of institutional provision is an urgent matter even in Newcastle, where we have the invaluable services of the Princess Mary Maternity Hospital. Recent developments of our knowledge have shown the inadequacy of that hospital. During 1929 there occurred therein 30 deaths from sepsis including 19 extra-mural cases. On analysis of these 28 were found to have been cases sent in in emergency, for the most part patients in which labour had already commenced, and which had been manipulated unsuccessfully outside the hospital, often in districts at a considerable distance from it. It has been proved definitely that it is from such cases that outbreaks of puerperal fever are liable to originate, and to spread to the other inmates. Obviously, then, these should not be received into the uninfected wards, but should be isolated. Such procedure is quite impracticable in the old and makeshift buildings of the Princess Mary Maternity Hospital,

which it is suggested should be removed to new buildings, erected for their special purpose (as these certainly were not) beside the Royal Victoria Infirmary, where all facilities would be at hand.

The distribution of dried milk amounted to 28 tons (equal to 38,920 gallons of fresh milk) given free to 2,323 babies, while coupons for 17 tons (equal to 23,630 gallons of fresh milk) at cost price, were given for 1,124 babies. In 1928 the quantities were 30 tons free and 15 tons cost price. Only mothers attending the centres with their infants were so assisted, 35·3 per cent. receiving free milk and 17·1 per cent. coupons for the cost price article.

1,089 medical sessions for mothers and babies were held at the eleven centres, and were attended by 6,574 babies, on an average about eight times each. The average attendance at each session was 48·2, which is many more than could be dealt with satisfactorily by the medical staff.

The extensions that have been sanctioned by Committee are urgently necessary.

To the 35 regular *voluntary workers* under Mrs. Roy Williamson, the City is under a debt of gratitude for much self-sacrificing work, both at the welfare centres and at three play centres at Diana Street, Wharncliffe Street, and St. Peters.

The **Princess Mary Maternity Hospital** fulfils a function that is absolutely vital to Newcastle. As to its future development, reference has already been made.

The *Babies' Hospital and Mothercraft Centre*, the *Fleming Memorial Hospital*, and the *Newcastle Day Nursery*, each of which receives a contribution from the

Health Committee, have all fulfilled their valuable undertakings during the past year in close co-operation with the Department.

Under the **Nursing Homes Registration Act, 1927**, 20 homes have been registered, four for maternity cases and 16 for maternity, medical and surgical purposes. Two homes were exempted from registration under Sections 6 and 7 of the Act.

Inspections and re-inspections are carried out for the Medical Officer of Health by the Maternity and Child Welfare Medical Officer and the Chief Health Visitor, and the assistance of the Chief Constable has also been sought and obtained in regard to the facilities possessed by the homes for preventing, quelling and escaping from fire. All the homes are of satisfactory type, and are well conducted.

TUBERCULOSIS.—With the exception of the previous year (1928) the death rate from tuberculosis, pulmonary and otherwise, was the lowest that has yet been experienced in Newcastle. The death rate from the pulmonary form was 1·09 per 1,000 population, and from the non-pulmonary forms 0·26 per 1,000, the latter being the lowest that has yet been recorded. There were 43 more notifications (551) of cases of the pulmonary form of the disease than in the previous year, and 44 less (236) of the non-pulmonary.

DR. GEO. HURRELL (Tuberculosis Medical Officer) reports that on the whole it has been a relatively quiet year in this section of the Department.

On the 1st of May a new ward block at the Advanced Case Hospital at Walker Gate was opened. This contains 44 beds, and in the main wards every pair is separated from the next couple by a glass partition or

screen. These, while limiting spray infection, and lessening the amount of cubic space necessitated by the number of patients to be accommodated, have proved quite successful so far, and the ward, while cheery and bright, appears less vast to the patients than is usually the sensation produced by such institutions. At present the ward is occupied by female patients. As noted previously, the subsequent transfer to Walker Gate of pulmonary cases from the Poor Law Hospital, and the concentration of all such cases in the one institution, make it necessary for the Committee to consider the erection of still another ward pavilion, to set free the fever block that is now being used again at the present time for tuberculosis.

16 cases admitted to the Advanced Case Hospital so far improved that they were considered fit for admission to Barrasford Sanatorium. The provision of an X-ray installation at the Tuberculosis Dispensary might, with great advantage, be considered. Hitherto patients from the Dispensary have had to travel down to the Hospital for this essential part of their examination. Since the introduction of pneumo-thorax treatment the plant at Walker Gate is in almost constant use, and it is exceedingly difficult and inconvenient for it to serve the patients from the Dispensary as well as the Hospital; only 60 per cent. of the Dispensary patients who require it are so examined. For patients awaiting examination at the Hospital the waiting room facilities are altogether inadequate.

Notification in 7·4 per cent. of the pulmonary cases had not been made prior to death, and 28·8 per cent. of them were notified only within three months of death. This is much about the same proportion as, or rather less, than previously, and is due mainly to neglect of

the sufferers to consult a doctor until the disease is well advanced, and to the notoriously rapid course of much of the disease in this area. 87 per cent. of all the patients suffering from tuberculosis of the lungs who attended the Dispensary and died in 1929 had received treatment in one or other of the hospitals at least once. The Dispensary deals with all notified cases, and relegates them to the doctor or appropriate institution for their treatment, and keeps in touch with them wherever they are. The other members of the patients' households are overhauled, if at all possible, for the discovery of any early signs of the disease, in order that treatment may be initiated without delay.

The **Voluntary Tuberculosis Care Council**, which includes the Chairman of the Health Committee and of the Tuberculosis Sub-Committee, with the Medical Officer of Health and the Tuberculosis Medical Officer, renders that much-needed help without which the whole of the Tuberculosis Scheme would be unavailing. The Health Committee makes an annual grant to this Care Council.

Tuberculosis is most frequent in the poorer and worst housed portions of the City. For the past ten years—1920-29—the average death rate in All Saints' Ward was 2·12, whereas in Jesmond it was only 0·79. The Tuberculosis Medical Officer reports all insanitary conditions in connection with the homes of patients to the Senior Sanitary Inspector, who effects whatever improvements are possible.

By the close co-operation and assistance of the Housing Committee 170 cases of families in which the disease had been found have been given priority in allocation of Corporation houses, and in 31 other cases where

the rent was beyond their means the families were helped by exchange to houses providing better home conditions.

At **Stannington Sanatorium**, where 30 beds are leased for children, half of whom may be suffering from surgical conditions, the average stay was 176 days for boys and 277 days for girls. Of the 43 patients, 16 were improved, one left without improvement, and in the remainder the disease was rendered quiescent.

At **Barrasford Sanatorium** the Medical Superintendent (DR. C. G. R. GOODWIN) reports that the outstanding event of the year was the opening of the handicrafts shop in August, and the institution of provision for occupational therapy. The purpose of the work carried on in this extension, under an instructor, is not primarily for the purpose of teaching patients an alternative trade, but to give them some employment that will occupy their minds healthily. A suitable building was made available, and central heating installed. Part was equipped for handicrafts—raffia, basketry, leather work, sea grass weaving, book-binding, rug-making, etc., and part for woodworking under the control of the joiner. Dr. Goodwin reports that the standard of work throughout seems to be excellent, and there is a ready sale for articles on completion. In the woodworking section energy has been directed mainly to the making of articles of furniture for the institution, and so far, corner cupboards have been constructed for a number of patients' rooms. The wastage of material is almost negligible.

The average stay of patients was about $22\frac{1}{2}$ weeks, which is a further increase on previous years. As time is a most important factor in effecting a cure, the gradual extension of residence is encouraging.

A portion of a legacy was devoted by the permission of the Charity Commissioners to the provision of a new recreation room for the women patients. This obviates the old arrangement under which the one recreation room had to be shared by both sexes, at different hours. Rest has been relied upon as the principal factor in treatment rather than fresh air. The latter is, of course, important, but rest is of infinitely more value.

Artificial pneumo-thorax (or lung collapse) and sanocrysin were in use with fair success. Of 28 cases in which tubercle bacilli could not be found in the sputum, in 13 the disease became quiescent, in 11 showed improvement, and in the remaining four no material improvement. Of the other 129 whose sputum contained tubercle bacilli, in two the disease became quiescent, in 87 showed improvement, and in 40 there was no material improvement.

There is still considerable anxiety as to the report of the Health Committee recommending the erection of a Nurses' Home. The housing of the nursing and domestic staff urgently calls for extension, since these girls suffer overcrowding, discomfort and great personal inconvenience as a result of the considerable increase in the number of patients accommodated without any corresponding increase of space for those who have to attend to them. It is understood that this provision is contingent upon the receipt of Government assistance from the Unemployment Fund. Whether that assistance be forthcoming or no, the need for the Home remains extreme. Barrasford is so far out of the way that few people, except those immediately concerned, show any active interest in its work or in its needs, but merely take it for granted. It is to be hoped that in

this instance consideration will be had for those who are carrying on a responsible duty under conditions that are by no means pleasant or healthful.

The **Advanced Case Hospital**, at Walker Gate, admitted 303 patients, of whom 162 were males and 141 females. The average length of stay was about four months. 153 patients improved considerably, 16 passing on to Barrasford Sanatorium ; 53 left without improvement, and 85 died in Hospital. The part played by this institution in limiting the spread of tuberculosis can hardly be estimated. It is one of the most valuable pieces of preventive machinery the City possesses.

The **Open Air School** at Pendower is still doing excellent service in the hands of the Education Committee. More institutions of the sort would be of immense advantage, although the new schools that are now under construction are designed much more upon open air lines than ever before. There is nothing quite like the Pendower Schools, however, for building up weakly children, checking the development of tuberculosis, and acting as a general tonic for weedy youngsters, and much more could be made of the principle of the open air school in Newcastle. It has been said that there is no need for institutions of this sort if the schools are built aright, but here only some of our schools are so constructed, and there are many that are unsuitable for their purpose. So long as these exist there is need for Pendowers.

In the closer linking up that is being aimed at with the school medical service, an endeavour is about to be made to utilise the dental section of the school service to meet the needs of the Maternity and Child Welfare Section of the Health Department, and so avoid the establishment of separate clinics. The attention to the

teeth and the removal of continual septic foci in the mouth is becoming more and more generally appreciated as a very necessary precaution against future ill-health, such as rheumatism, and Local Authorities all over the country are increasing their provision of dental clinics for school children, for mothers, and also for sufferers from tuberculosis. The Health Committee, realising this need, has now made provision for dental services to be given at Barrasford Sanatorium, where a clinic is to be held once a month.

FOOD AND PROVISIONS.—377 samples of milk were examined for the presence of tuberculosis, which was found in 33 of them, equivalent to 8·7 per cent. This is a considerable increase upon the percentage of recent years, that in 1928 being only 3·7. The positive samples came from all over the wide area from which our milk is drawn: Northumberland, Cumberland, Dumfriesshire, and the North Riding of Yorkshire—22 farms being actually implicated. Three of the farms concerned were in Newcastle, and one positive sample was from a local dairy in a neighbouring town, which has a considerable sale of steam “sterilised” milk in bottles. Every effort is made to safeguard the Newcastle consumer. Graded milks, namely, “Certified” and “Grade A. (Tuberculin-Tested),” which are from tuberculin-tested herds, only amount to 6 per cent. of the total sold. The demand, however, is increasing, but very slowly, and it can only be marvelled at that parents should remain so indifferent to this most serious source of injury to their children, and that doctors, through whose hands pass so many sad cases which are due to infection from milk, do not insist more vigorously upon the necessity and value of this milk, which alone is guaranteed safe and free from disease by numerous and regular tests.

The Veterinary Officer and Inspector of Provisions (MR. THOMAS PARKER, F.R.C.V.S.), reports that there are now 19 cow-keepers occupying 30 cow sheds on 20 premises, with 258 milch cows, within the City. This is a decrease of 50 cows on last year's number. Except from the point of view of adequacy of supervision, the gradual removal of milking herds into country districts from the City is all to the good, if adequate arrangements for regular inspection by County Councils is only insisted upon by the Government. Those within the City's boundaries are all visited at least four times a year by one of the veterinary staff of the Health Department, and five tuberculous animals were found in this way.

There are 102 separate slaughterhouses in 15 different localities in the City. The steady growth of business since 1925 has caused the cattle market to be crowded to capacity. The demand upon slaughterhouse accommodation is considerably greater than the numerous killing shops within the City can cope with; structurally these are in many cases semi-ruinous, and their condition most insanitary and even revolting. The Health Committee has committed itself for long enough to an Abattoir Scheme in principle, and a number of sites have been explored. Difficulties from opposition or otherwise have been encountered in every instance, and an agreed site has not yet been found. 500 carcasses with 1,923 pounds of meat were seized and condemned during the year, 32 per cent. being on account of tuberculosis.

304 food carrying vessels came to the Quayside during 1929, which is nine more than in 1928. All imported articles were kept under supervision by Mr. Parker and his staff.

Food and Drugs Adulteration Acts.—The inspector under the Food and Drugs Acts (MR. C. RAIMES) reports the taking of 1,172 samples for analysis, including 785 of milk. Of the latter, 563 were rough-tested in the Health Department and appeared to be genuine. Of the remaining 222 the Public Analysts (DR. J. T. DUNN and MR. H. C. L. BLOXAM) found 22 to be below the minimal limits fixed by the Sale of Milk Regulations, 1901. Of the 387 samples of food and drugs other than milk, 21 were found to be “not genuine,” and three were “doubtful.”

22 milk cases were dealt with. 11 were taken to Court; convictions were obtained in all of them, with fines aggregating £32 10s. 0d. Cautions were issued by the Health Committee in respect of ten, and no proceedings were taken in one case.

Nine samples of condensed milk were taken under the Public Health (Condensed Milk) Regulations, 1923, and eight of these complied with the requirements. The remaining sample contained compounds of tin and copper, and the matter was taken up by the Medical Officer of Health with the manufacturers.

190 samples of milk were examined for evidence of excremental pollution, which was found present to an undesirable degree in 57 (or 30 per cent.), as compared with 15·9 per cent. in 1928 and 40·4 in 1927. The great proportion of dirty milks was found between May and October, when 47 per cent. were adversely reported upon. The results in 1929 must be ascribed largely to the prolonged warm summer.

Nearly 22,000 empty churns were examined at the railway stations in course of return to the farmers, and only 13 of them were found not to have been rinsed out.

There were examined, in addition to the foregoing, 3,531 empty churns passing through Newcastle in course of transit to the farms from retailers outside the City. 19 of these were found unrinsed. In every instance of defect the responsible retailer within the City was communicated with, and the result of the warning proved very satisfactory in each instance.

The Agricultural Department of Armstrong College is continuing very actively its assistance to dairy farmers by means of visits and instruction, and also repeated its classes upon this particular subject for sanitary inspectors. Milk traders are being brought more and more closely under supervision, and the conditions under which the trade is carried on are definitely improving, as producers and retailers appreciate the meaning and significance of the requirements. 25 applications were received for permission to retail milk, 16 being granted and nine refused. At the close of the year there were 650 retail milk-shops in the City, including 61 belonging to 10 large dairymen. Of the total, 66 were shops in which only dairy products and like commodities were retailed, 267 were shops selling other articles, and 42 were hawkers. It is hoped that it may be possible before very long to do away with the last class entirely, since they are a continual source of trouble, and are no credit to the trade.

The ice-cream trade has been maintained under supervision, and permits to manufacturers and to sellers are given by the Health Department. 36 applications were received during the year, and 22 were refused owing to the sanitary conditions being bad. Restaurant kitchens (which include hotels, cafés and dining rooms, and number 117), together with margarine warehouses and fried fish shops, have been regularly inspected. Restaurant kitchens are inspected as "work places,"

and as they come within the scope of the Public Health (Meat) Regulations, 1924, as well, the Veterinary Officer, working in conjunction with the Inspector of Workshops, has also been able to effect certain improvements.

184 samples of water were examined for the presence of bacillus coli as indicative of excremental pollution—animal or human. 101 were characterised by the Bacteriologist as satisfactory, 48 as fair, and 35 as unsatisfactory. The water is treated by sand filtration in filter beds, and by rapid filtration through batteries of high pressure filters, in addition to which it is chlorinated.

There are eight **Swimming Baths** in the City, of which five were equipped with a continuous system of filtration and æration (Royle's or Turnover), and three depended for cleanliness upon the complete changing of the water as frequently as is possible, twice or thrice a week. They have been maintained in a good and efficient state throughout the year. The conversion of the latter three baths to the continuous filtration and æration system has since been effected.

Bread baking is still carried on in 98 domestic bakeries, where small quantities are made and sold to people round about. This is not illegal, and on the whole the conditions are pretty good, but it is not desirable that bread should be baked for sale in what is practically part of a dwelling house.

THE HOUSE AND THE WORKPLACE.—Nuisance Abatement.—The Senior Sanitary Inspector (MR. C. RAIMES) dealt with 12,096 nuisances, which is 979 less than in 1928. In connection with these, 6,340 notices were served, and in all but 69 instances were effective without legal proceedings.

Overcrowding is still prevalent, particularly among the very poor. The Corporation housing schemes, which comprise over 5,000 houses since the War, do not seem to have afforded appreciable relief to this type of citizen, although they have done much to improve the home conditions of the artisan and clerical classes. Unemployment and trade depression are the chief causes of poverty and consequent inability to pay for decent homes.

392 privies were converted to the water carriage system, of which 298 were pails and 94 were "cell" privies. 54 dry ashpits were also removed and replaced by portable dustbins. The rate of conversion has again been slower than in the previous year, which is accounted for by the difficulty in effecting the conversion of the relatively few and least objectionable of the privies remaining in the City. There were at the end of 1929 1,075 privies remaining in the City, of which 988 were pail closets. A strenuous effort is being made to obtain the conversion of all of these by the end of 1930.

Atmospheric Pollution.—563 observations were made of 126 industrial chimneys, 12 of which showed excessive output of smoke on 22 occasions. Four statutory notices were served, and these resulted in the installation of smoke-preventing apparatus in three cases, and a "grit preventer," together with the use of a better class of coal in the fourth case, with permanent effect. There have been four complaints against steam road wagons. Comment has already been made upon this subject in connection with atmospheric gauges on page 14.

Housing.—1,189 new houses were erected during the year, 841 in Corporation Schemes and 348 by private enterprise, and at the end of the year there were 268 in

course of erection by the Corporation. Since the war the Municipality has built 5,496 houses, and private enterprise 2,930.

In 1929 the death rates were 19·2 in St. Andrew's, 18·0 in All Saints', and 16·1 in St. John's Wards, where congestion is great, as compared with 9·7 in Heaton, 10·5 in Dene, and 12·2 in Jesmond Wards. As indicating the influence of overcrowding upon the liability to tuberculosis the attack rate per thousand population of pulmonary tuberculosis was 2·99 in All Saint's Ward, as against 0·82 in Dene. Approximately 34 per cent. of the population live in one and two-roomed houses, yet over 39 per cent. of the deaths from consumption were in this class of dwelling. In All Saints' Ward the deaths of babies under one year amounted to 140 per 1,000 births, whereas in Jesmond the rate was only 37. Over a period of 22 years the deaths of babies in one-, two- and three-roomed houses have been 127, 115 and 96 respectively.

Procedure in dealing with insanitary areas is still exceedingly slow. The Insanitary Property Sub-Committee is now almost at a standstill, and action in regard to the Elswick East Terrace and the St. Peter's areas has been temporarily suspended pending the promised legislation to facilitate proceedings by Local Authorities. Meanwhile, the original statement of the areas in the City that should be scheduled as unhealthy has been revised and supplemented by the addition of nine others, so that the properties standing to be dealt with as soon as the Committee can get at them number 1,166 houses, comprising 2,178 dwellings of 3,764 rooms inhabited by 8,720 individuals. These can all be classified in insanitary areas, but there are besides 143 individual houses containing 258 dwellings of 457 rooms occupied by 1,026 individuals which can be more appropriately dealt with

separately, and not in areas. The enquiry which resulted in this revised list revealed a very large amount of overcrowding and sub-letting, apart from other insanitary conditions, so that it was found that approximately 10,000 citizens are living under conditions which do not even approach the standard of fitness suggested by the Ministry of Health. The Tenement House By-laws are being vigorously enforced, and this improves conditions in individual houses as regards accessible water supply and sinks, washing facilities, closet accommodation, and ventilated food storage and lighting. In many districts it is impossible to carry out the By-law requirements owing to bad planning of the houses, or their advanced state of dilapidation. Excessive rents are also found, 8/- a week being a common charge for a single room. Additional accommodation required to remedy this overcrowding depends upon the standard adopted. If it be the Registrar General's minimum of two persons per room, 4,873 rooms will be necessary. If the Ministry of Health's requirement of 1.5 persons per room, then 6,948 rooms will be necessary; but if the social standard aiming at the separation of the sexes for sleeping purposes, houses containing 8,337 rooms will have to be built.

At the end of 1928 there were 85 caravans in occupation in various parts of the town, particularly in Byker and Walker. By the end of the year the number had been reduced to 22, but this was only accomplished with very great difficulty and the exercise of very much patience and forbearance. Legal proceedings were resorted to in 12 cases. In all 1,323 visits were required by the District Inspectors, an altogether excessive proportion of whose time was taken up with this particular problem. The invasion which Newcastle has suffered during the last year or two has been due partly to the

shortage of houses and partly to the fact that a neighbouring Authority, Whitley Bay and Monkseaton, has been applying vigorously its newly acquired By-laws to rid its area of a plague of unregulated and very insanitary caravans and bungalows. The rentals demanded by owners of the caravans in Newcastle range from 8/- to 10/- per week, whereas the rent of a two-roomed tenement, with bath, provided by the Newcastle Housing Improvement Trust is only 6/6, and 10/- per week pays for a four-roomed house with every convenience built by the Church Army Housing Trust.

It is satisfactory to note that owners and agents are showing rather more willingness to comply with notices served under the Tenement By-laws. Nevertheless 198 cases had to be reported for legal proceedings, the work in most instances being done after the service of a summons.

There were 37 **common lodging houses** in 1929, and these were well conducted. A revised set of By-laws for the regulation of these houses is in process of preparation.

Factories and Workshops, Offices, Places of Amusement and Schools.—8,867 inspections of factories and workplaces were made, and 271 notices to remedy defects were served. The homes of outworkers were also kept under observation.

Close attention has been paid to the condition of **cinemas and theatres** by the Senior Sanitary Inspector. The Kata-thermometer is used to test the efficiency of ventilation. 72 day visits and 44 night visits were made for the inspection of sanitary arrangements in dressing rooms and for testing. 78 tests in all were carried out. Improvement still continues, 27 of the houses coming up to the standard of first class, and eight to second class, as compared with 22 and 13 respectively in 1928.

The **Temperance Festival** was held as usual on the Town Moor in June, and attracted an enormous concourse of people. In its public health aspects this great fair was well managed. Sanitary accommodation was adequate, and the ice cream, milk and foodstuff retailers were kept under close control.

NEW LEGISLATION.—By far and away the most important item under this head was the Local Government Act, 1929. Under it the powers of the Poor Law Guardians were transferred *en bloc* to the Local Authority. The City Council, interpreting the purpose of the Act as the abolition of all consideration of social position and means in the relief of sickness, relegated the administration of all matters concerning ill-health to the Health Committee. During a great part of the year that Committee was preparing to carry out its new responsibilities in as efficient a manner as possible. To that end relations were established with the newly formed Committee representing the Voluntary Hospitals, and a joint committee was set up in order that the best possible use might be made of the Hospital for the general service of the citizens as a whole, but without forgetting that its primary purpose was the assistance of the sick poor.

The Artificial Cream Act, 1929, also came into force during the year.

POPULAR EDUCATION.—Numerous lectures and addresses on public health subjects were given by the medical staff to social bodies of various kinds in the City. The monthly journal “Better Health,” edited and published by the Central Council for Health Education of the Society of Medical Officers of Health was adopted. Three or four pages of local matter are contributed by the Health Department and incorporated with the rest of the magazine. A well known firm of publishers has undertaken to prepare the local issue for the Health Committee free of cost, in return for the local advertising rights, the advertisements all being subject

to the approval of the Medical Officer of Health. At the present time 4,000 copies of this magazine are distributed free each month to a carefully selected list of individuals, including school teachers, hospital nurses, social workers, and so forth, and there is good reason to believe that the journal is much appreciated, and does a great deal of useful propaganda.

Health Week was celebrated from 16th to 22nd June, during the North-East Coast Exhibition, and synchronised with a Provincial Sessional Meeting of the Royal Sanitary Institute, and with the Child Welfare Exhibition in the "Evening World" Pavilion at the Exhibition. Special slides and films were shown at a number of cinemas, popular articles appeared in each morning and evening issue of the local press, excellent slogans were exhibited in the tramcars, and a number of addresses were given to the various Women's Co-operative Guilds and to fathers at the Maternity and Child Welfare Centres. The School Medical Officers and Dentists also gave special health talks to the senior scholars in the elementary schools.

STAFF.

The City Hospital at Walker Gate suffered a severe loss in August by the death of James Cockburn, Chief Engineer. Mr. Cockburn served the institution faithfully and well for nearly 32 years, and during that period saw its growth from a comparatively small self-contained institution of 104 beds to the large and widely spread collection of buildings which to-day comprises the hospital of 338 beds and all its accessories. He was a loyal and trusted servant of the Corporation and a highly competent engineer, and his thorough knowledge of the hospital in all its various sections was invaluable. He was succeeded by his son, George Cockburn, who while acting as Assistant Engineer for a number of years showed the same ability and devotion to the interests of the hospital as his father.

In November, to the great regret of all concerned, the Matron of the Hospital, Miss H. E. Cook, was obliged to retire from her post owing to ill-health. Miss Cook was appointed in August, 1908. During the twenty-one years of her service, she strove tirelessly for the efficiency of the nursing and the welfare of the patients and staff. The Matron's position had become very much more onerous than when Miss Cook first took it over, and there is no question that the ever growing pressure of her duties told severely upon her general health. Miss Cook's kindness and gentle sympathy will be remembered with gratitude by all who came in contact with her. The vacancy was filled by the appointment of Miss J. L. Watt, whose experience was obtained in Edinburgh Royal Infirmary and Fever Hospital, and at Poole, and with her is associated, as Domestic Superintendent, Miss A. M. Steede.

The work falling upon the Health Department staff is always heavy, but during the past winter it has been exceptionally so. Cheerfully undertaken and carefully done, however, the confidence of the Health Committee in its officers has been justified, and warm acknowledgment is offered to the Committee for its ready help and support in all difficulties.

I have the honour to be, Sir,

Your obedient servant,



M.D.,
Medical Officer of Health.

Health Department,
Town Hall,
Newcastle-upon-Tyne,
9th July, 1930.

CITY AND COUNTY OF NEWCASTLE UPON TYNE.

Health Report, 1920.

I.—GENERAL.

MORTALITY TABLES,
SOCIAL CONDITIONS, CLIMATOLOGY,
WATER SUPPLY, DISPOSAL OF REFUSE..

Population, Birth Rate, and Special Mortality Rates during the period of the Notification of Infectious Diseases.

LAT. N.	BIRTH RATE.	GENERAL DEATH RATE.	INFANTILE MORTALITY (Deaths per 1,000 Births).	PUERPERAL SEPTIS.		TOTAL MATERNAL DEATHS.		ZYMOTIC DEATH RATE.	DIARRHOEA AND ENTERITIS (ALL AGES).		SMALLPOX.				TYPHUS.		ENTERIC FEVER.					DIPHTHERIA.					SCARLET FEVER.					ERYSIPELAS.					MEASLES. **			WHOOPIING COUGH.		CANCER.		RESPIRATORY SYSTEM.					TUBERCULOSIS. OTHER FORMS.					YEAR.			
				Number of Cases Notified.	Number of Deaths.	Death Rate per 1,000 Births.	Number of Deaths.		Death Rate per 1,000 Births.	Number of Deaths.	Death Rate per 1,000 Population.	Cases Notified.	Number of Deaths.	Case Mortality per cent.	Death Rate per 1,000 Population.	Attack Rate per 1,000 Population.	Cases Notified.	Number of Deaths.	Case Mortality per cent.	Death Rate per 1,000 Population.	Attack Rate per 1,000 Population.	Cases Notified.	Number of Deaths.	Case Mortality per cent.	Death Rate per 1,000 Population.	Attack Rate per 1,000 Population.	Cases Notified.	Number of Deaths.	Case Mortality per cent.	Death Rate per 1,000 Population.	Attack Rate per 1,000 Population.	Cases Notified.	Number of Deaths.	Case Mortality per cent.	Death Rate per 1,000 Population.	Attack Rate per 1,000 Population.	Number of Deaths.	Death Rate per 1,000 Population.	New Cases Notified.	Number of Deaths.	Death Rate per 1,000 Population.	Attack Rate per 1,000 Population.	New Cases Notified.	Number of Deaths.	Death Rate per 1,000 Population.	Attack Rate per 1,000 Population.											
153,766	35.6	24.7	168	7	1	0.18	?	?	4.1	105	0.68	493	60	12.2	0.39	3.2	96	24	216	42	16.4	0.27	1.41	29	11	37.9	0.07	0.19	1,152	124	10.8	0.81	7.5	?	..	?	209	1.36	51	0.33	?	?	..	?	?	1883							
157,567	38.5	22.5	156	16	9	1.48	32	5.27	3.2	182	1.15	174	12	7.0	0.07	1.1	17	6	260	47	18.1	0.30	1.65	76	16	21.0	0.10	0.48	2,167	156	7.2	0.99	13.7	10	..	0.06	15	0.09	85	0.54	73	0.46	..	329	2.08	176	1.12	505	3.20	..	1884
161,526	36.2	24.7	174	11	4	0.68	31	5.30	4.3	128	0.79	70	3	4.3	0.02	0.43	9	7	253	56	22.1	0.35	1.58	93	26	28.0	0.16	0.57	1,227	83	6.8	0.51	7.6	16	..	0.10	359	2.22	49	0.30	64	0.40	..	368	2.28	138	0.86	506	3.13	..	1885
165,585	36.9	20.7	156	14	11	1.80	41	6.72	2.4	161	0.97	5	0.03	1	..	205	34	16.6	0.21	1.27	73	19	26.0	0.11	0.44	1,004	45	4.5	0.27	6.1	12	..	0.07	42	0.25	102	0.62	81	0.49	..	362	2.18	155	0.94	517	3.12	..	1886
169,745	36.1	23.3	174	10	4	0.65	29	4.74	3.1	127	0.75	7	0.04	37	4	325	42	12.9	0.25	1.92	90	31	34.4	0.18	0.53	1,208	38	3.1	0.22	7.1	19	..	0.11	211	1.24	71	0.42	77	0.45	..	341	2.01	167	0.98	508	3.0	..	1887
174,012	34.5	18.7	138	5	3	0.50	14	2.33	1.3	100	0.57	4	1	122	23	18.9	0.13	0.70	97	33	34.0	0.19	0.56	749	24	3.2	0.14	4.3	5	..	0.03	10	0.06	64	0.37	115	0.66	..	348	2.00	136	0.75	484	2.78	..	1888
178,383	34.2	22.6	175	2	2	0.33	24	3.92	2.8	245	1.37	7	2	136	19	14.0	0.11	0.76	96	30	31.2	0.17	0.54	601	30	5.0	0.17	3.4	13	..	0.07	94	0.53	129	0.72	73	0.41	..	387	2.18	214	1.20	601	3.38	..	1889
182,866	36.0	23.4	169	4	3	0.45	30	4.56	1.9	184	1.01	4	0.02	17	3	198	35	17.7	0.19	1.08	181	44	24.3	0.24	0.99	613	26	4.2	0.14	3.3	25	..	0.14	7	0.04	80	0.44	92	0.50	..	383	2.10	186	1.02	569	3.12	..	1890
186,976	35.7	23.6	175	5	2	0.30	30	4.49	2.5	112	0.60	19	2	134	24	17.9	0.13	0.72	121	42	34.7	0.22	0.65	785	39	5.0	0.21	4.2	11	..	0.06	128	0.68	179	0.96	107	0.57	..	398	2.13	259	1.39	657	3.62	..	1891
189,770	34.6	19.8	150	7	2	0.30	41	6.23	1.5	114	0.60	4	1	25.0	0.00	0.02	97	14	14.4	0.07	0.51	156	41	26.3	0.22	0.82	963	29	3.0	0.15	5.1	8	..	0.04	67	0.35	75	0.40	105	0.56	..	409	2.15	204	1.08	613	3.23	..	1892
192,478	34.4	21.4	174	4	2	0.30	38	5.74	2.4	196	1.02	25	0.13	3	2	141	25	17.7	0.13	0.73	171	28	16.4	0.15	0.89	693	23	3.3	0.12	3.6	8	..	0.04	208	1.08	33	0.17	123	0.64	..	347	1.81	190	0.99	537	2.78	..	1893
195,285	32.0	18.8	157	4	1	0.16	38	6.08	2.0	124	0.63	2	0.01	164	30	18.3	0.15	0.84	112	27	24.1	0.14	0.57	826	27	3.3	0.14	4.2	7	..	0.04	94	0.48	149	0.76	116	0.60	..	370	1.90	167	0.86	537	2.74	..	1894
198,141	32.4	20.8	186	13	5	0.78	31	4.82	2.2	248	1.25	213	48	22.5	0.24	1.07	174	49	28.2	0.25	0.88	959	26	2.7	0.13	4.8	3	..	0.02	140	0.71	57	0.29	141	0.71	..	406	2.05	218	1.10	624	3.15	..	1895
201,035	33.3	19.4	165	6	5	0.74	27	4.03	1.9	175	0.87	176	33	18.7	0.16	0.87	164	34	20.7	0.17	0.82	896	23	2.6	0.11	4.4	6	..	0.03	133	0.66	95	0.47	142	0.71	..	401	1.99	206	1.03	607	3.02	..	1896
203,871	33.5	20.0	177	7	3	0.44	34	5.00	1.7	199	0.98	138	33	23.9	0.16	0.68	102	19	18.6	0.09	0.50	496	24	4.8	0.12	2.4	4	..	0.02	96	0.47	62	0.30	143	0.71	..	375	1.84	213	1.05	588	2.88	..	1897
206,950	34.0	22.5	190	2	..	..	21	3.00	2.4	187	0.90	17	3	17.6	0.01	0.08	..	..	307	66	21.5	0.32																																			

GENERAL STATISTICS.

POPULATION.—As estimated by the Registrar General at the middle of the year 1929—**283,400.**

RETURN SHEWING THE ESTIMATED POPULATION OF THE DIFFERENT
WARDS IN THE CITY, ACREAGE, POPULATION PER ACRE, ETC.

Ward.	Population (estimated)	Gross Area in acres.	Less for Public Open Spaces in acres.	Nett Area in acres.	Population per acre, gross.	Nett.
St. Nicholas'	2,702	127	1	126	21	21
St. Thomas'	13,654	1,636	1,110	526	8	26
St. John's	15,082	169	3	166	89	91
Stephenson	18,414	215	..	215	86	86
Armstrong	15,349	178	31	147	86	104
Elswick	12,531	253	17	236	50	53
Westgate	15,002	90	1	89	167	169
Arthur's Hill	11,252	142	6	136	79	83
Benwell	18,225	550	31	519	33	35
Fenham	18,034	1,189	4	1,185	15	15
All Saints'	17,384	176	2	174	99	100
St. Andrew's	11,631	173	3	170	67	68
Jesmond.....	10,991	441	33	408	25	27
Dene	15,871	818	88	730	19	22
Heaton	15,230	225	27	198	68	79
Byker	17,182	140	..	140	122	122
St. Lawrence	17,607	181	7	174	97	101
St. Anthony's	15,500	601	5	596	26	26
Walker	21,759	1,149	34	1,115	19	19
CITY	283,400	8,453	1,403	7,050	33	40

INHABITED HOUSES.—**65,762** inhabited houses, which, on the estimated population, shows an average of 4·3 persons per dwelling.

RATEABLE VALUE. — **£2,441,321.** A penny rate produced £9,583.

SOCIAL CONDITIONS.—The principal **Trades and Occupations** are of a healthy nature, being generally engineering and machine making; conveyance of men, goods, and messages; building and works of construction, *e.g.*, ship building; and connected with ships and

boats, sea-faring and harbour work ; food, tobacco, drink, and lodging ; coal and shale mines ; and commercial or business occupations.

The amount of **Poor Law Relief** granted during the year ended 31st March, 1929, was £300,904 for outdoor relief, and £35,697 for indoor maintenance, making a total of **£336,601**, as compared with **£383,460** in the previous year.

The number of registered unemployed was 20,354 at the beginning of the year, and 18,505 at its close.

The City contains many **Hospitals** and other medical charities, but since wide surrounding districts are also served by them, figures as to patients treated are not of local value.

MARRIAGES.—2,271 marriages took place during the year, as compared with 2,195 in 1928, and 2,248 in 1927.

BIRTHS.—5,126, equivalent to a rate of 18·1 per 1,000 population.

DEATHS.—(All causes)—5,040, equivalent to an uncorrected rate of 17·8 per 1,000 population, and, after deduction of the deaths of 1,313 non-citizens, and addition of 172 Newcastle residents who died elsewhere, to a corrected rate of 13·8 per 1,000 population. In 1928 the death rate was 13·1.

36 *Orders for Burial* (Newcastle-upon-Tyne Improvement Act, 1882, Sec. 47) were made, 16 being in respect of bodies lying in inhabited rooms, and 20 being cases from hospital.

TOTAL DEATHS DURING RECENT YEARS FROM CERTAIN CLASSES
OF DISEASE.

Classification in Table III. of Ministry of Health.

	Nervous System.	Circu- latory.	Respira- tory.	Digestive.	External Causes.
1912	410	435	603	204	152
1913	457	453	722	332	114
1914	448	505	863	465	142
1915	470	635	873	361	163
1916	477	448	856	281	117
1917	497	478	864	268	135
1918	498	503	957	252	135
1919	439	497	1,040	272	133
1920	384	534	861	275	124
1921	347	581	726	297	113
1922	363	689	913	181	92
1923	363	623	623	219	112
1924	376	667	749	206	110
1925	359	696	681	248	131
1926	335	742	596	220	158
1927	328	751	615	204	123
1928	331	796	480	247	153
1929	311	893	577	226	148

INFANTILE MORTALITY.—438 infants died before completing the first year of life, representing a rate of **85** deaths per 1,000 births, the second lowest on record.

ZYMOTIC DEATH RATE.—There were 217 deaths from the “ Chief Zymotic Diseases ”—smallpox, measles, scarlet fever, diphtheria, whooping cough, fever (typhus, simple continued, and enteric) and diarrhoea (all ages)—equivalent to 0·77 deaths per 1,000 population.

TUBERCULOSIS.—384 persons died from various forms of tuberculosis, 309 being from pulmonary, and 75 from non-pulmonary. The equivalent death rates are: *all forms* 1·35, *pulmonary* 1·09, and *non-pulmonary* 0·26 per 1,000 population.

For comparison of death rates with previous years see large table page 52A.

For particulars of deaths, as to site of disease, age, etc. see table, page 60A.

GEOLOGY.—The geological formation of the area consists of heavy clay on the top of hard sandstone, which overlies coal seams.

CLIMATOLOGY.—The following is a brief summary of the main features of the weather in 1929, as recorded on the “ Newcastle Chronicle’s ” instruments :—

The mean barometer reading was 29·6 inches. The mean maximum and minimum temperatures were 64·35 F., and 46·81 F. respectively.

The outstanding features of the year were January’s heavy rain and snow, February’s severe frost, and the drought of March. Indeed, the year was a particularly dry one, rain falling on 120 days, with a total precipitation of only 17·028 inches. The wettest month was January, with 2·856 inches to its credit, which was 1·307 inches above the local average. On one occasion only in March was any rain recorded, this being the driest month of the year, with 0·42 inches—1·291 inches below local average.

September also proved a dry month, rain falling on six days only, the total being 0·85 inches.

The warmest day was July 21st.

The following table shows the frequency of the directions of the wind :—

W.	on 43 days.
N.W.	on 118 „
N.E.	on 35 „
E.	on 3 „
S.E.	on 59 „
S.W.	on 100 „
S.	on 6 „
N.	on 1 day.

Sunshine.

Sunshine records have been available by the courtesy of Professors G. W. Todd and C. Heigham, of Armstrong College. The observations are taken at Cockle Park Farm (fifteen miles north of the City, and in a rural area), and

at the College itself. During the year 1,211 hours of sunshine were registered in the City, as compared with 1,566 at Cockle Park.

WATER SUPPLY.—The City is served by the Newcastle and Gateshead Water Company with a plentiful supply of pure upland surface water, collected from large catchment areas at Catcleugh, close to the Cheviots, and in lower Northumberland. It is stored in large impounding reservoirs at Catcleugh, Hallington, and Whittle Dene, and passes through filters at Whittle Dene and Throckley. It was found, however, that filtration did not secure the degree of freedom from bacteria which was desirable, and during the last few years it has been supplemented by chlorination, with marked improvement.

In the vast majority of cases the household taps are served directly from the mains without intervening cisterns. A separate trade supply is piped to some of the great riverside works from a point above the filters.

The bacteriological reports upon the water are given on page 148.

SEWERAGE.—There are 317 miles of sewers discharging directly into the Tyne, which is tidal, at various points along the seven miles of river frontage.

CLEANSING AND SCAVENGING.—With the exception of certain areas, the ashbins are now only emptied once per week instead of twice. With the prevailing high costs it is improbable that the frequency of removal can be increased.

There are 66,652 dry ashtubs and galvanised iron bins, 443 dry ashpits, and 1,075 conservancy system closets in the City. Conversion of the latter is proceeding steadily and during 1929, 298 pail-closets, and 94 cell privies were removed and water closets sub-

stituted. 54 dry ashpits were also removed and dustbins substituted. All the schools are served by the water-carriage system.

ADOPTIVE AND LOCAL ACTS IN FORCE.

Adopted Acts.—Infectious Disease (Prevention) Act, 1890. Section 4.

Public Health Acts Amendment Act, 1890.—Part III—Whole of ; Part IV.—Whole of.

Public Health Acts Amendment Act, 1907.—Part II.—Sections 20, 22, 23, 26, 27, 28, 29, 30, 31, and 33 ; Part III.—Sections 34, 35, 36, 37, 38, 43, 45, 48, 49, 50 and 51 ; Part IV.—Sections 52, 53, 56, 58, 59, 61, 62, 63, 64, 65 and 68 ; Part X.—Whole of.

Public Health Act, 1925.—Part II., Sections 15, 21, 22, 23, 24, 25, 26, 27, 28, 30, 31, 32, 33 and 35.

Part III.—Whole of.

Part IV.—Whole of.

Part V.—Whole of.

Local Acts.—Newcastle-upon-Tyne Improvement Act, 1837.

„ „ 1846.

„ „ 1853.

„ „ 1865.

„ „ 1870.

„ „ 1882.

„ „ 1892.

Newcastle-upon-Tyne Tramways and Improvement Act 1899.

Newcastle-upon-Tyne Corporation Act .. 1911.

Newcastle-upon-Tyne Corporation Act .. 1926.

VITAL STATISTICS, YEAR 1929.

COMPARISON WITH OTHER DISTRICTS.

DISTRICT.	Birth Rate.	General Death Rate.	Infantile Mortality Rate.	Death Rate per 1,000 from Enteric Fever, Smallpox, Scarlet Fever, Measles, Whooping Cough, and Diphtheria	Tuberculosis (all forms) Death Rate.
England and Wales	16.3	13.4	74	0.34	†
107 Great Towns (includ. London)	16.6	13.7	79	0.43	†
NEWCASTLE-UPON-TYNE	18.1	13.8	85	0.44	1.35
Hull	20.3	15.2	104	0.59	1.24
Leeds.....	15.5	16.5	97	0.56	1.30
Bradford	15.0	15.7	81	0.39	1.01
Sheffield	15.4	13.2	87	0.25	0.95
Manchester	16.9	15.3	97	0.46	1.41
Salford	16.6	15.4	125	0.76	1.30
Liverpool	21.6	15.1	96	0.94	1.46
Nottingham	17.0	15.3	96	0.47	1.26
Leicester	15.3	13.9	80	0.36	1.35
Stoke-on-Trent	19.0	15.4	105	0.60	1.22
Birmingham	17.1	13.5	79	0.43	1.09
Cardiff	17.5	12.9	84	0.76	1.32
Bristol	15.6	13.0	60	0.29	1.21
Portsmouth	16.8	13.7	67	0.26	0.92
London (County).....	15.8	14.2	71	0.42	1.09
Gateshead.....	20.4	14.7	107	0.48	1.72
South Shields	19.7	15.2	122	0.43	1.95
Tynemouth	18.3	13.1	95	0.58	1.35
Sunderland	22.3	17.0	103	1.13	1.54
Middlesbrough	25.0	17.1	100	0.56	1.68
*County of Northumberland	16.8	12.2	81	0.49	1.00
*County of Durham	20.2	12.9	94	0.51	1.06

* Administrative County.

† Not available.

Vital Statistics of Whole District during 1929 and previous Years.

YEAR.	Population estimated to Middle of each Year.	BIRTHS.			TOTAL DEATHS REGISTERED IN THE DISTRICT.		TRANSFERABLE DEATHS		NETT DEATHS BELONGING TO THE DISTRICT.			
		Uncor-rected Number	Nett.		Number	Rate.	of Non-residents registered in the District.	of Residents not registered in the District.	Under 1 Year of Age.		At all Ages.	
			Number	Rate.					Number	Rate per 1,000 Nett Births	Number	Rate.
1	2	3	4	5	6	7	8	9	10	11	12	13
1911	267,261	7,089	7,082	26.5	4,667	17.5	448	165	973	137	4,384	16.4
1912	269,193	7,219	7,194	26.7	4,221	15.7	529	146	727	101	3,838	14.5
1913	271,295	7,480	7,460	27.5	4,611	17.0	560	141	908	122	4,192	15.5
1914	271,523	7,564	7,538	27.8	5,069	18.7	546	138	1,029	137	4,660	17.2
1915	278,107	7,575	7,545	27.8	5,257	18.9	693	207	1,007	133	4,771	17.2
1916	278,107	7,332	7,248	26.2	4,875	17.5	680	232	899	123	4,427	15.9
1917	278,107	6,548	6,495	23.4	4,646	16.7	718	246	732	113	4,174	15.0
1918	278,107	6,555	6,468	23.3	5,380	19.3	872	308	692	107	4,816	17.3
1919	275,099	6,793	6,674	23.3	5,358	19.5	737	234	806	120	4,855	17.6
1920	286,061	8,433	8,070	28.0	4,609	16.1	779	195	817	101	4,025	14.0
1921	278,400	7,720	7,284	26.2	4,602	16.5	817	142	699	96	3,927	14.1
1922	281,600	7,432	6,987	24.8	4,698	16.7	831	145	646	92	4,012	14.2
1923	283,800	6,961	6,367	22.4	4,298	15.1	789	150	623	98	3,659	12.9
1924	285,900	7,029	6,335	22.2	4,607	16.1	929	172	632	100	3,850	13.5
1925	286,300	7,031	6,215	21.6	4,732	16.5	989	165	550	88	3,908	13.6
1926	284,700	6,728	6,007	21.0	4,460	15.7	979	161	530	88	3,642	12.8
1927	288,500	6,215	5,395	18.7	4,468	15.5	1,058	178	474	88	3,588	12.4
1928	281,500	6,360	5,429	19.2	4,683	16.6	1,178	179	447	82	3,684	13.1
1929	283,400	6,120	5,126	18.1	5,040	17.8	1,313	172	438	85	3,899	13.8

|| Calculated on a population of 282,200.

Corrected Death Rates in different Wards, 1929.

St. Nicholas'.	St. Thomas'.	St. John's.	Stephenson.	Armstrong.	Elswick.	Westgate.	Arthur's Hill.	Benwell.	Fenham.	All Saints'.	St. Andrew's.	Jesmond.	Dene.	Heaton.	Byker.	St. Lawrence.	St. Anthony's.	Walker.	City.
13.0	11.1	16.1	15.4	14.8	15.2	13.6	11.9	13.2	10.7	18.0	19.2	12.2	10.5	9.7	12.6	15.4	12.5	15.3	13.8

All deaths occurring in Public Institutions have been allotted to the Wards to which they properly belong.

Carried forward

RETURN OF DEATHS FROM "ALL CAUSES" DURING THE 52 WEEKS ENDED 28th DECEMBER, 1929—Continued.

CAUSE OF DEATH.	AGE PERIODS.																		WARDS—NET DEATHS.																						
	GROSS.									NET.																															
	under 1 year.	1 year and under 2.	2 years and under 5.	5 years and under 15.	15 years and under 25.	25 years and under 45.	45 years and under 65.	65 years and above.	TOTAL (GROSS).	Under 1 year.	1 year and under 2.	2 years and under 5.	5 years and under 15.	15 years and under 25.	25 years and under 45.	45 years and under 65.	65 years and above.	TOTAL (NET).	St. Nicholas.	St. Thomas.	St. John's.	Stephenson.	Armstrong.	Elswick.	Westgate.	Arthur's Hill.	Benwell.	Fenham.	All Saints.	St. Andrew's.	Jesmond.	Dene.	Heaton.	Byker.	St. Lawrence.	St. Anthony's.	Walker.	Inward.	Outward.	Deaths in the City of Newcastle, or Non-Residents.	
Brought forward	171	155	137	138	205	451	1046	1174	3477	145	125	101	91	158	365	884	1113	2982	26	111	189	225	185	131	166	103	170	149	233	177	106	132	111	166	210	143	246	118	613	1564	
VI. DISEASES OF DIGESTIVE SYSTEM.																																									
Diseases of the Buccal Cavity and Annexa	1	1	2	..	4	1	1	6	..	2	..	2	1	1	2	3	
Diseases of the Pharynx, Tonsillitis	1	..	1	4	2	3	10	5	20	1	2	2	3	1	2	1	1	..	1	1	2	1	..	3	26	34	
Ulcer of Stomach	14	23	4	..	43	1	22	25
Ulcer of the Duodenum	13	14	1	..	30	1	5	2	..	8	2	1	1	1	1	1	1	1	3	2	1	
Other Diseases of the Stomach	8	2	3	1	..	17	7	1	3	4	15	..	1	7	4	3	5	1	3	1	6	2	1	5	..	8	12	33	55	
Diarrhoea and Enteritis (under 2 years)	88	10	98	59	7	66	..	1	7	4	3	5	1	1	1
Ulceration of the Intestines	1	..	1	..	1	2	1	..	6	..	2	2	..	1	1	1	6	1	4	2	8	10	
Colitis	1	1	3	3	6	27	2	1	1	1
Diarrhoea and Enteritis (2 years and over)	9	6	2	4	5	7	33	..	8	5	2	1	1	1	1	1	1	1	..	1
Intestinal Parasites
Appendicitis	1	1	2	8	8	11	11	3	45	1	..	1	..	1	2	6	..	11	..	1	1	1	1	1	1	1	1	..	1
Hernia, Intestinal Obstruction	14	1	2	3	1	5	27	20	73	5	1	..	4	7	13	30	..	1	2	2	1	4	2	..	1	2	3	1	..	2	1	3	3	..	2	..	43	63	
Other Diseases of the Intestines	..	1	..	1	..	2	1	..	5	2	1	..	4	1	1	2	..	1
Acute Yellow Atrophy of Liver	1	1	1	2	..	5	1
Hydatid Tumour of Liver	1	1	1	6	..	1	1	1	1	..	1	1	2	
Cirrhosis of the Liver (Non-Alcoholic)	1	5	1	..	7	1	4	1	1	1	1	1	..	1
Biliary Calculi	3	29	14	..	46	9	5	14	1	..	1	1	2	..	1	2	2	2	..	2	1	32	37
Other Diseases of the Liver	1	1	6	7	5	..	20	1	1	4	4	10	..	1	1	1	2	..	1	..	1	2	1	10	14	
Diseases of the Pancreas	1	3	1	..	5	1	1	1	4	4
Peritonitis	2	3	2	..	5	1	13	1	..	2	1	4	2	1	..	1	9	12	
VII.—NON-VENEREAL DISEASES OF GENITO-URINARY SYSTEM AND ANNEXA.																																									
Acute Nephritis	..	1	..	2	2	6	4	3	18	..	1	..	1	..	2	3	3	10	..	1	..	2	1	1	3	1	1	8	11	
Bright's Disease	3	1	15	65	39	123	2	9	56	39	104	..	5	6	11	3	9	2	6	6	1	7	6	4	6	12	4	3	22	47	
Other Diseases of the Kidney and Annexa	6	..	..	2	4	12	7	31	3	..	..	..	1	..	2	5	5	15	..	..	..	1	1	2	1	2	1	3	1	1	..	..	..	..	1	..	..	16	14	
Calculi of the Urinary Passages	..	..	..	2	1	..	..	3	..	..	..	..	..	1	1	..	..	2	..	..	..	..	..	..	..	..	..	1	1	..	..	..	..	..	..	..	1	3	7	
Diseases of the Bladder	1	..	..	..	2	3	8	14	..	..	..	..	..	1	2	8	11	..	2	1	..	..	..	3	..	1	..	1	1	..	1	..	..	..	..	..	1	7	9	
Diseases of the Urethra, Urinary Abscess, &c.	..	..	..	..	1	6	2	9	..	..	..	..	..	..	3	..	3	..	..	..	1	..	..	..	..	..	1	..	1	1	..	..	..	..	..	1	1	28	27	
Diseases of the Prostate	..	..	..	..	8	30	..	38	..	..	..	..	..	..	3	8	11	..	2	..	..	1	2	1	..	..	1	..	2	1	..	..	..	..	..	..	1	4	3	
Uterine Tumour (non-cancerous)	1	3	4	
Cysts and other Tumours of the Ovary (non-cancerous)	..	..	..	1	1	..	..	2	..	..	..	..	..	1	..	..	1	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	1	2	
Salpingitis	..	..	..	4	1	..	..	5	..	..	..	..	..	2	..	..	2	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	1	..	..	3	5	
Other Diseases of the Uterus (Endometritis)	1	1	1	1	1	1	1	
Non-Puerperal Disease of the Breast	1	1	1	1	1	1	
VIII.—THE PUERPERAL STATE.																																									
Abortion	2	2	1	1	1	1	2	
Ectopic Gestation	2	2	2	..	1	2	7	
Other Accidents of Pregnancy	1	7	8	2	2	1	6	8	
Puerperal Haemorrhage	..	..	..	8	8	..	..	16	..	..	..	..	3	4	..	..	4	..	..	..	1	..	..	..	..	..	..	..	..	..	1	..	..	1	..	..	..	3	15	
Other Accidents of Childbirth	..	..	..	..	8	..	..	7	..	..	..	..	..	2	9	..	11	..	1	..	1	1	1	..	..	..	4	2	1	..	..	1	..	..	..	..	..	32	41	
Puerperal Fever	..	..	..	11	32	..	..	43	..	..	..	..	2	9	..	..	11	..	..	..	1	1	1	..	..	..	2	1	..	..	..	..	1	..	..	..	..	14	26	
Puerperal Albuminuria and Convulsions	..	..	..	3	17	..	..	20	..	..	..	..	2	4	..	..	6	..	..	..	2	..	..	..	..	..	1	2	..	1	..	..	..	..	..	..	..	6	6	
Puerperal Phlegmasia	7	7	1	1	
IX.—DISEASES OF SKIN AND CELLULAR TISSUE.																																									
Senile Gangrene	..	..	..	..	1	5	7	13	..	..	..	..	..	2	4	6	..	..	..	..	..	1	..	..	..	..	..	1	..	..	..	..	2	1	..	..	..	7	9	
Carbuncle—Boil	..	..	..	..	1	1	1	3	..	..	..	..	..	2	1	1	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	3		
Phlegmon, Acute Abscess	9	3	2	..	4	5	7	30	2	1	1	..	..	1	2	2	9	..	..	..	1	1	1	1	2	1	..	1	..	..	1	..	..	..	..	..	..	2	26	
Diseases of the Integumentary System	7	..	..	2	1	2	1	13	6	..	..	1	..	1	..	1	1	9	..	..	1	3	1	..	..	..	..	..	..	..	..	2	..	..	..	..	..	4	7	
X.—DISEASES OF BONES, etc.																																									
Diseases of the Bones	..	..	1	8	3	5	3	1	21	..	..	..	2	..	1	2	1	6	..	..																			

CAUSES OF DEATH AT DIFFERENT PERIODS OF LIFE FOR 1929.

(REGISTRAR GENERAL'S RETURN.)

CAUSES OF DEATH.	Sex	All Ages	0—	1—	2—	5—	15—	25—	45—	65—	75—
All Causes.	M. F.	2145 1775	253 184	77 64	54 60	70 45	97 92	274 203	627 444	404 336	289 347
1—Enteric Fever.	M. F.	1 3	.. ..	.. ..	.. ..	.. ..	.. 1	1 ..	.. 1	.. 1	....
2—Smallpox.	M. F.	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..
3—Measles.	M. F.	34 40	7 11	15 16	11 11	1 2	....	....	....	....	....
4—Scarlet Fever.	M. F.	1 4	1 ..	.. ..	.. 3	.. 1	....	....	....	....	....
5—Whooping Cough.	M. F.	13 16	6 1	5 8	2 7	....	....	....	....	....	....
6—Diphtheria.	M. F.	8 5	.. 1	1 ..	1 1	4 2	.. ..	2 ..	.. 1	....	....
7—Influenza	M. F.	55 73	.. 1	3 1	1 2	5 ..	4 1	9 9	21 18	7 23	5 18
8—Encephalitis Lethargica.	M. F.	5 5	.. ..	.. ..	.. ..	1 ..	.. 1	4 1	.. 3	....	....
9—Meningococcal Meningitis.	M. F.	9 3	1 1	.. ..	2 ..	3 1	3 ..	.. ..	.. 1	....	....
10—Tuberculosis of Respiratory system	M. F.	188 122	1 ..	1 1	2 ..	5 8	39 43	77 47	61 23	2..	....
11—Other Tuberculous Diseases.	M. F.	35 39	1 3	3 5	1 8	11 4	8 9	9 6	2 3	.. 1	....
12—Cancer, Malignant Disease.	M. F.	217 174	.. ..	.. ..	.. 1	1 1	2 ..	14 23	111 75	66 56	23 18
13—Rheumatic Fever.	M. F.	6 10	.. ..	.. ..	.. 1	2 1	.. 3	2 2	2 3	....	....
14—Diabetes.	M. F.	7 21	.. ..	1 1	.. ..	.. ..	1 1	2 1	.. 10	3 6	.. 2
15—Cerebral Hæmorrhage, etc.	M. F.	95 91	.. ..	.. ..	.. ..	.. ..	.. ..	2 3	33 31	38 32	22 25
16—Heart Disease.	M. F.	330 314	.. 1	.. ..	.. ..	1 2	6 7	28 23	112 101	110 86	73 94
17—Arterio-sclerosis.	M. F.	145 82	.. ..	.. ..	.. ..	.. ..	.. ..	2 1	34 8	61 32	48 41
18—Bronchitis.	M. F.	123 91	14 9	5 2	1 ..	1 ..	1 1	6 3	34 13	31 18	30 45

Causes of Death at different periods of life
for 1929—*continued*.

CAUSES OF DEATH.	Sex	All Ages	0—	1—	2—	5—	15—	25—	45—	65—	75—
19—Pneumonia (all forms).	M. F.	200 147	33 31	27 18	18 18	11 6	12 3	33 13	43 28	14 17	9 13
20—Other Respiratory Diseases.	M. F.	22 18	1 1	1 2	3 1	.. ..	.. ..	3 2	10 8	1 2	3 2
21—Ulcer of Stomach or Duodenum.	M. F.	22 7	.. ..	.. ..	.. ..	.. ..	2 1	7 1	10 3	1 1	2 1
22—Diarrhœa.	M. F.	41 38	31 23	3 4	4 3	1 4	1 ..	.. 1	.. ..	.. 1	1 2
23—Appendicitis and Typhlitis.	M. F.	12 1	1 ..	.. ..	1 ..	.. ..	1 ..	3 ..	6 ..	.. ..	.. 1
24—Cirrhosis of Liver.	M. F.	5 1	.. ..	.. ..	.. ..	.. ..	.. ..	1 ..	3 1	.. ..	1 ..
25—Acute and Chronic Nephritis.	M. F.	54 58	.. ..	1 ..	.. ..	.. 1	.. ..	7 3	25 34	14 10	7 10
26—Puerperal Sepsis.	M. F.	.. 12	.. ..	.. ..	.. ..	.. ..	.. 2	.. 10	....	....	....
27—Other Accidents and Diseases of Pregnancy and Parturition.	M. F.	.. 19	.. ..	.. ..	.. ..	.. ..	.. 4	.. 15	....	....	....
28—Congenital Debility and Malformation, Premature Birth.	M. F.	114 77	109 76	.. 1	.. ..	3 ..	1 ..	.. ..	.. ..	1..	....
29—Suicide.	M. F.	19 8	.. ..	.. ..	.. ..	.. ..	2 ..	2 5	14 3	1..	....
30—Other Deaths from Violence.	M. F.	75 42	3 4	4 ..	1 2	4 4	8 3	15 8	21 7	12 5	7 9
31—Other Defined Diseases.	M. F.	306 252	44 21	6 5	6 2	16 8	6 12	45 26	84 67	41 45	58 66
32—Causes ill-defined or unknown.	M. F.	3 2	.. ..	1 ..	.. ..	.. ..	.. ..	.. ..	1 2	1..	....

UNDER 1 YEAR.

Legitimate. Illegitimate.

(M.)	237	16
(F.)	171	13

REPORT OF THE
MATERNITY AND CHILD WELFARE
MEDICAL OFFICER.

II.—THE CHILD.

INFANTILE MORTALITY, MATERNITY AND
CHILD WELFARE.

INFANTILE MORTALITY.

SUMMARY OF BIRTHS AND DEATHS, 1929.

	LEGITIMATE.			ILLEGITIMATE.			Grand Total.
	M.	F.	Total.	M.	F.	Total.	
Total Births in the Year ..	2,973	2,804	5,777	203	140	343	6,120
Nett „ „ „ 	2,548	2,367	4,915	125	86	211	5,126
Nett Deaths under 1 year ..	240	170	410	15	13	28	438
Death Rate per 1,000 births	94	72	84	120	151	133	85

BIRTHS (CORRECTED) IN WARDS IN THE DIFFERENT QUARTERS OF THE YEAR 1929.

WARD.	1st Quarter.	2nd Quarter.	3rd Quarter.	4th Quarter.	TOTALS.
St. Nicholas'	8	8	6	7	29
St. Thomas'	42	29	28	30	129
St. John's	89	87	79	84	339
Stephenson	119	84	91	95	389
Armstrong	81	77	57	79	294
Elswick	48	58	46	54	206
Westgate	79	64	67	68	278
Arthur's Hill	21	26	22	25	94
Benwell	91	105	98	97	391
Fenham	75	106	84	98	363
All Saints'	80	96	87	81	344
St. Andrew's	62	55	41	39	197
Jesmond	20	22	19	21	82
Dene	45	58	33	41	177
Heaton	44	46	45	50	185
Byker	74	94	85	79	332
St. Lawrence	114	110	98	78	400
St. Anthony's	79	94	90	69	332
Walker	137	147	144	137	565
CITY	1,308	1,366	1,220	1,232	5,126

DISTRIBUTION OF DEATHS.

WARDS.	Nett Deaths of Children under 1 year of age in 1929.					Children under 1 year of age— Death rate per 1,000 Births.	Birth Rate per 1,000 Popula- tion (cor- rected).
	1st Quarter.	2nd Quarter.	3rd Quarter.	4th Quarter.	Whole Year		
St. Nicholas' ..	1	1	..	..	2	69	10·7
St. Thomas' ..	3	3	..	3	9	70	9·4
St. John's	15	5	9	9	38	112	22·5
Stephenson ...	13	10	4	7	34	87	21·1
Armstrong ...	15	7	6	3	31	105	19·2
Elswick	7	4	4	4	19	92	16·4
Westgate	13	2	3	2	20	72	18·5
Arthur's Hill .	..	2	..	4	6	64	8·3
Benwell	7	6	3	6	22	56	21·5
Fenham	3	11	4	5	23	63	20·1
All Saints'	21	6	11	10	48	140	19·8
St. Andrew's .	7	3	2	4	16	81	16·9
Jesmond.....	2	1	..	..	3	37	7·5
Dene	5	3	3	1	12	68	11·2
Heaton	1	4	2	2	9	49	12·1
Byker	7	5	4	5	21	63	19·3
St. Lawrence .	18	10	11	3	42	105	22·7
St. Anthony's .	10	5	6	6	27	81	21·4
Walker	18	12	5	21	56	99	26·0
CITY.....	166	100	77	95	438	85	18·1

All births and deaths occurring in Public Institutions have been allotted to the Wards to which they properly belong.

RETURN OF DEATHS UNDER ONE YEAR OF AGE DURING THE 52 WEEKS ENDED 28TH DECEMBER, 1929.

CAUSE OF DEATH.	AGE PERIODS.																			Deaths in Institutions in the City of "Residents" or "Non-Residents"	
	GROSS.									NETT (after allowing for transfers).											
	Under 1 Week.	1-2 Weeks.	2-3 Weeks.	3-4 Weeks.	Total under 1 Month.	1-3 Months.	3-6 Months.	6-9 Months.	9-12 Months.	Total under 1 Year of Age.	Under 1 Week.	1-2 Weeks.	2-3 Weeks.	3-4 Weeks.	Total under 1 Month.	1-3 Months.	3-6 Months.	6-9 Months.	9-12 Months.		Total under 1 Year of Age.
GENERAL DISEASES.																					
Measles	2	1	4	13	20	..	..	..	..	..	1	1	4	13	19	3
Scarlet Fever	1	1	..	..	..	..	..	..	..	..	1	1	1
Whooping Cough	1	2	3	1	7	..	..	..	..	..	1	2	3	1	7	1
Diphtheria	1	..	1	..	..	..	..	..	..	..	1	..	1	1
Erysipelas	1	..	1	2	..	..	..	..	..	..	1	..	1	2	2
Cerebro-Spinal Fever	3	1	..	..	4	..	..	..	..	..	2	1	..	..	3	1
Acrodynia	1	1	..	..	..	..	..	..	..	..	..	..	..
Tuberculosis of the Respiratory System.....	1	1	..	..	..	..	..	..	2	..	1	1	..
Tuberculosis of the Central Nervous System.....	2	3	2	7	..	..	..	..	..	..	2	1	..	3	5
Tuberculosis of Peritoneum and Intestines.....	1	1	..	..	..	..	..	..	..	..	1	1	..
Disseminated Tuberculosis	1	1	..	..	..	..	..	..	..	..	..	..	1
TOTAL TUBERCULOSIS	2	3	5	10	..	..	..	..	..	..	2	1	2	5	6
Pyæmia, Septicæmia	1	..	1	..	..	..	..	1	..	..	1	..	1	..	..	..	..	1	..
Syphilis	1	1	1	..	3	1	..	..	..	4	..	1	..	1	2	..	..	..	..	2	3
GENERAL DISEASES NOT INCLUDED ABOVE.																					
Rickets, Softening of Bones	1	..	2	3	..	..	..	..	..	..	1	..	2	3	..
Cancer of the Stomach, Liver, etc.....	1	1	..	..	..	..	..	..	..	..	..	1	1
Diseases of the Thymus.....	1	1	..	..	..	..	1	..	..	..	1	1	..	..	..	..	1	1
Anæmia Chlorosis	1	..	1	..	2	..	..	..	..	..	..	..	1	..	1	1
Other General Diseases	1	..	..	..	1	..	1	..	..	2	..	..	..	..	..	..	..	..	..	..	2
DISEASES OF NERVOUS SYSTEM AND SENSE ORGANS.																					
Epilepsy	1	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..
Infantile Convulsions	2	1	2	..	5	2	2	2	..	11	2	1	2	..	5	2	2	2	..	11	..
Mastoid Disease	1	..	1	2	..	..	..	..	..	..	1	..	1	2	1
Mongolism.....	1	..	..	..	1	..	..	..	..	..	1	..	..	..	1	..
DISEASES OF CIRCULATORY SYSTEM.																					
Pericarditis	1	..	1	..	..	..	..	..	..	..	1	..	1	1
Diseases of the Lymphatic System.....	1	1	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	1
DISEASES OF RESPIRATORY SYSTEM.																					
Laryngismus Stridulus.....	1	..	1	..	..	..	..	..	..	..	..	..	..	1
Bronchitis	1	..	1	2	5	5	4	7	23	..	1	..	1	2	5	5	4	7	23	4
Broncho-pneumonia.....	1	1	1	..	3	4	13	20	21	61	1	..	..	..	1	5	11	20	16	53	20
Lobar Pneumonia	2	2	..	..	..	..	..	..	..	..	2	2	..
Pneumonia (type not stated).....	2	2	1	5	..	..	..	..	..	..	1	2	1	4	1
Pleurisy	1	1	..	..	..	..	..	..	..	..	1	1	1
Congestion and Hæmorrhagic Infarct of Lung	1	..	..	..	1	..	..	..	..	..	1	..	..	..	1	..
Carried forward.....	5	4	5	3	17	22	32	42	58	171	3	3	3	3	12	18	28	39	48	145	56

RETURN OF DEATHS UNDER ONE YEAR OF AGE DURING THE 52 WEEKS ENDED 28TH DECEMBER, 1929.

CAUSE OF DEATH.	AGE PERIODS.																				Deaths in Institutions in the City of "Residents" or "Non-Residents."
	GROSS.										NETT (after allowing for transfers).										
	Under 1 Week.	1-2 Weeks.	2-3 Weeks.	3-4 Weeks.	Total under 1 Month.	1-3 Months.	3-6 Months.	6-9 Months.	9-12 Months.	Total under 1 Year of Age.	Under 1 Week.	1-2 Weeks.	2-3 Weeks.	3-4 Weeks.	Total under 1 Month.	1-3 Months.	3-6 Months.	6-9 Months.	9-12 Months.	Total under 1 Year of Age.	
Brought forward	5	4	5	3	17	22	32	42	58	171	3	3	3	3	12	18	28	39	48	145	56
DISEASES OF DIGESTIVE SYSTEM.																					
Stomatitis .....	..	..	..	..	..	..	..	..	1	1	..	..	..	..	..	..	..	..	1	1	1
Diseases of the Stomach .....	..	1	..	1	2	4	1	..	1	8	..	1	..	1	2	3	1	..	1	7	..
Diarrhœa and Enteritis.....	2	6	3	4	15	18	32	14	9	88	1	4	1	4	10	18	16	10	5	59	46
Appendicitis .....	..	..	..	..	..	..	1	..	..	1	..	..	..	..	..	..	1	..	..	1	1
Hernia, Intestinal Obstruction .....	..	..	..	..	..	1	1	9	3	14	..	..	..	..	..	..	..	4	1	5	12
Jaundice .....	..	..	..	..	..	1	..	..	..	1	..	..	..	..	..	1	..	..	..	1	1
Peritonitis .....	..	..	..	..	..	1	1	..	..	2	..	..	..	..	..	..	..	..	..	..	2
NON-VENEREAL DISEASES OF GENITO-URINARY SYSTEM AND ANNEXA.																					
Diseases of the Kidney and Annexa .....	..	..	..	..	..	3	3	..	..	6	..	..	..	..	..	1	2	..	..	3	1
Pyuria.....	..	..	..	..	..	..	..	..	1	1	..	..	..	..	..	..	..	..	..	..	1
DISEASES OF SKIN AND CELLULAR TISSUE.																					
Phlegmon—Acute Abscess .....	..	3	2	2	7	2	..	..	..	9	..	..	1	1	2	..	..	..	..	2	9
Diseases of the Integumentary System.....	2	1	1	..	4	1	1	1	..	7	2	1	..	..	3	1	1	1	..	6	4
DISEASES OF BONES, &c.																					
Diseases of the Joints .....	..	..	..	..	..	1	1	..	..	2	..	..	..	..	..	1	..	..	..	1	2
MALFORMATIONS.																					
Congenital Malformations	13	5	1	2	21	15	6	3	1	46	10	3	..	1	14	7	1	2	1	25	22
DISEASES OF EARLY INFANCY.																					
Premature Birth	138	18	7	2	165	9	1	..	..	175	96	15	7	..	118	7	1	..	..	126	76
Congenital Debility and Sclerema	7	3	3	..	13	7	2	1	..	23	6	2	1	..	9	4	2	1	..	16	8
Icterus Neonatorum.....	2	1	..	..	3	..	1	..	..	4	2	1	..	..	3	..	..	..	..	3	1
Atelectasis	13	..	1	1	15	..	..	..	..	15	7	..	..	1	8	..	..	..	..	8	6
Diseases of Umbilicus	2	..	..	..	2	1	..	..	..	3	1	..	..	..	1	1	..	..	..	2	1
Injuries at Birth	14	4	..	..	18	..	..	..	..	18	11	4	..	..	15	..	..	..	..	15	9
Lack of Care	1	..	..	..	1	..	..	..	..	1	1	..	..	..	1	..	..	..	..	1	..
Other Diseases of Early Infancy.....	5	1	..	..	6	..	..	..	..	6	2	1	..	..	3	..	..	..	..	3	3
AFFECTIONS PRODUCED BY EXTERNAL CAUSES.																					
Burns	1	..	..	..	1	..	..	..	..	1	1	..	..	..	1	..	..	..	..	1	1
Accidental Mechanical Suffocation.....	2	..	2	1	5	..	2	..	..	7	2	..	2	1	5	..	2	..	..	7	..
Homicide .....	..	..	..	..	..	..	..	1	..	1	..	..	..	..	..	..	..	..	..	..	..
TOTAL	207	47	25	16	295	86	85	71	74	611	145	35	15	12	207	62	55	57	57	438	203

ANALYSIS OF INFANTILE MORTALITY SINCE COMMENCEMENT OF ORGANISED MATERNITY AND CHILD WELFARE
WORK BY THE HEALTH DEPARTMENT.

	1901	1902	1903	1904	1905	1906	1907	1908	1909	1910	1911	1912	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923	1924	1925	1926	1927	1928	1929
Death-rate of Infants <i>under 1 year</i> per 1,000 births	177	139	166	155	138	153	126	139	122	123	137	101	122	137	133	123	113	107	120	101	96	92	98	100	88	88	88	82	85
Death-rate of Infants <i>under 3 months</i> per 1,000 births	83.8	74.8	84.9	82.6	71.6	75.6	68.6	76.6	64.8	66.9	71.5	60.3	67.7	70.7	68.2	66.2	58.7	58.6	64.1	62.1	61.0	57.2	54.4	59.0	53.4	52.9	55.6	50.8	52.5
Death-rate of Infants from <i>Premature Birth</i> , per 1,000 births	20.1	20.7	25.1	20.9	19.7	22.0	21.2	24.8	19.8	18.8	21.7	19.3	22.0	19.5	24.0	22.0	22.3	27.4	24.6	20.6	22.2	18.4	21.2	26.7	19.0	20.6	22.6	20.6	24.5
Death-rate of Infants <i>under 1 year</i> per 1,000 births, from <i>Premature Birth</i> , plus all <i>Congenital Causes</i> *	40.8	51.7	62.1	60.6	52.1	61.5	43.0	44.6	42.3	42.6	43.9	48.0	57.4	51.1	56.6	51.0	46.0	45.3	51.5	43.1	39.0	34.8	41.5	45.5	38.6	38.6	38.6	35.4	38.8
Death-rate of Infants <i>under 1 year</i> per 1,000 births, from <i>Diarrhœa</i> and all other <i>Digestive Diseases</i> †	45.7	12.8	26.9	21.8	22.4	35.2	12.7	24.8	13.5	16.7	25.1	7.8	16.6	25.3	20.1	14.3	14.8	11.9	14.7	14.9	16.0	9.1	11.5	9.6	11.6	13.1	9.3	13.4	15.0
Death-rate of Infants <i>under 1 year</i> per 1,000 births, from <i>Infantile Atrophy</i> , <i>Debility</i> and <i>Marasmus</i>	15.8	19.8	30.8	29.2	24.4	31.4	11.1	10.6	14.6	13.5	22.7	21.4	25.6	23.0	25.0	22.4	17.7	13.0	18.0	16.9	13.0	9.4	11.5	9.5	10.3	7.7	6.5	4.4	3.7
Death-rate of Infants <i>under 1 year</i> per 1,000 births, from <i>Measles</i> .....	..	..	..	..	..	5.35	2.60	0.60	3.64	2.26	4.95	3.61	2.28	4.65	6.90	2.50	2.46	0.77	3.89	0.99	2.88	0.29	4.87	1.10	1.9	1.7	0.6	2.2	3.7
Death-rate of Infants <i>under 1 year</i> per 1,000 births, from <i>Whooping Cough</i> .....	..	..	..	..	..	3.42	7.30	5.73	4.30	5.05	7.35	2.78	5.50	5.20	5.17	4.10	3.70	6.65	0.60	3.1	3.7	1.6	5.3	1.9	4.2	3.8	1.3	3.9	1.4
Death-rate of Infants <i>under 1 year</i> per 1,000 births, from <i>Respiratory Diseases</i> .....	..	..	..	..	..	20.8	24.6	27.0	24.4	25.2	26.4	20.4	22.2	30.6	24.9	28.0	27.0	20.9	27.6	26.9	18.7	32.0	23.6	27.9	22.7	18.1	27.1	16.6	16.4
Death-rate of Infants <i>under 1 year</i> per 1,000 births, from <i>Tuberculosis</i> (all forms) ....	..	..	..	..	..	3.53	3.71	4.65	4.55	4.25	2.40	3.20	3.88	3.88	3.40	2.60	1.54	2.63	1.80	1.36	1.51	1.29	2.2	1.6	0.6	2.0	2.4	1.3	1.0

For particulars of deaths, as to causes, etc., see Tables on pages 60A and 66A.

DEATHS OF CHILDREN UNDER SCHOOL AGE.

The mortality rate among children, aged 1 to 5 years, in 1929, per 1,000 births in the years 1925 to 1928 (inclusive) was 11.1. The corresponding figure for each of the previous five years was as follows:—1928, 9.9; 1927, 9.5; 1926, 11.1; 1925, 15.1; 1924, 13.8.

Prior to 1911 figures uncorrected for cases belonging to other districts.

*“ *All Congenital Causes* ” includes Syphilis, Congenital Defects, and Diseases of Early Infancy.

†“ *Diarrhœa and all other Digestive Diseases* ” includes Diarrhœa, Dysentery, Epidemic or Zymotic Enteritis, Rickets, Diseases of the Stomach, Enteritis, Obstruction of Intestine, Peritonitis and other Diseases of the Digestive System.

Report of the Maternity and Child Welfare Medical Officer.

TO THE MEDICAL OFFICER OF HEALTH.

SIR,

General.

I have the honour to submit to you my tenth annual report.

Interim reports dealing specifically with The Pre-School Child ; The Need for Dental Treatment of Centre Children ; Centre requirements in new Housing Districts ; Congestion prevailing at some of the present Centres ; Open-air Nursery Schools ; and The Fifth English Speaking Conference on Maternity and Child Welfare held in London in July, were presented during the year, with suggestions for improving the service where it was deemed necessary to do so. These reports were sympathetically received, and the extensions will be put into effect during the forthcoming year. The suggested provision of open air nursery schools for our pre-school children led to a joint meeting between the Maternity and Child Welfare Committee and representatives of the Education Committee. Owing to the somewhat complex nature of these schools and certain anomalies connected with the staffing of them, it was decided to ask the Education Committee to take the matter up and deal with it. The subject is under consideration at the present time, and doubtless Newcastle will have its own open air play centres in due course.

MATERNITY.

Five thousand and fifty-seven Newcastle Women were confined in the City during the year, and of these thirty died as a result of childbirth, a death rate of 5·9 per thousand.

The following table gives the causes of these deaths, with a five year comparison :—

CAUSES.	1929	1928	1927	1926	1925
Abortions	1	2	..	4	1
Accidents of Pregnancy	2	2	3	1	1
Puerperal Hæmorrhage	4	3	2	3	1
Other Accidents of Child-birth ..	5	4	5	1	2
Puerperal Fever	11	9	4	5	4
Puerperal Albuminuria and Con- vulsions.....	6	4	4	4	8
Puerperal Phlegmasia.....	1	1	2	1	1
Puerperal Insanity .....	..	1	..	..	..
Puerperal Disease of Breast .....	..	1	..	..	..
	30	27	20	19	18

As will be seen in the above table, the maternal mortality rate continues to rise, and there is an increase in the number of deaths from sepsis. These facts are causes for serious anxiety, and the attention of those principally concerned has been drawn to them. No satisfactory explanation can be offered, but some light may possibly be thrown on the problem by recalling the unfavourable conditions under which so many Tyneside mothers are living, and by remembering that large numbers of them are the wives of unemployed men, and are therefore necessarily suffering from a state of lowered vitality, just at the time in their lives when perfect condition of mind and body is desirable. Such women are prone to become septic if exposed to infection, and especially if dirty and unnatural efforts have been made to prematurely determine pregnancy, as have undoubtedly been made in some instances. The prospect

of having to feed another little body on impoverished and scanty means is a terrifying one in many households, and significant figures which have a direct bearing on the subject are these :—

Registered Stillbirths	329
Deaths due to Premature Births	126

A great deal of attention has been given to the subject of maternal mortality during the year, not only locally, but nationally, because it is almost the only cause of death which has not diminished during recent years. Locally, a committee—of which I am a member—has been considering means of improving the midwifery service of the City generally, and in particular from a nursing point of view ; the broad suggestion being that every lying-in woman in the City should have at her service a qualified midwife as well as a doctor. This is a badly needed innovation, which I hope will soon be introduced.

Ante-Natal Supervision.

One thousand three hundred and forty-eight expectant mothers attended the City Centres 3,931 times. Both these figures are a little less than those for the previous year, but it is almost certain that some women who would ordinarily come to the Centres are—partly as a result of the deliberations of the above mentioned special committee, and partly as a result of propaganda through and at the Centres—seeking ante-natal advice from their own doctors and midwives ; and two thousand four hundred and ninety-two patients from the City and district attended the ante-natal department of the Princess Mary Maternity Hospital.

Of the women confined in Newcastle, therefore, the majority must receive ante-natal care and advice either from public or private sources. The following table shows the attendances at the ante- and post-natal clinics :—

CENTRE.	ANTE-NATAL.		POST-NATAL.	
	Attendance.	Individuals.	Attendance.	Individuals.
Benwell	691	224	81	2
Byker	741	246	52	11
Diana Street	679	264	34	3
Portland Street	401	161	13	1
St. Peter's	241	85	10	7
Walker	602	213	6	..
Wharnccliffe Street ..	576	155	18	5
	3,931	1,348	214	29

REPORT ON ANTE-NATAL CASES.

The following were the conditions found, and the results of the confinements of 1,023 expectant mothers who attended the municipal ante-natal centres during 1929, and whose children were born during that year.

These mothers were sent to the ante-natal centres by :—

	<i>Cases.</i>	<i>Percentage.</i>
Doctors	110	11%
Midwives	208	21%
Health Visitors on Districts	96	9%
Welfare Centres and Voluntarily	609	59%
	1023	

The result of the subsequent confinements were :—

Type of Confinement.	Number of Cases.	Resulting in		
		Living Children.	Still-born Children.	Sets of Twins.
Normal	863	835	17	11
Instrumental	125	104	18	3
Cæsarian Section	11	10	1	..
Induction	7	7	..	..
Abortion	17	..	..	..
Total	1,023	956	36	14

Abnormalities were found in 73, or 7 per cent. of the cases, and the ultimate results were as follows :—

Abnormality.	No.	Normal Confinements.			Instrumental Confinements.			Cæsarian Sections.			Labour Induced.		
		No.	Living Children.	Still-born Children.	No.	Living Children.	Still-born Children.	No.	Living Children.	Still-born Children.	No.	Living Children.	Still-born Children.
Breach Presentation	37	22	19	3	13	7	6	2	1	1	..	..	..
Twin Pregnancies ..	14	11	18	4	3	2	4	..	..	..	..	..	..
Deformed Pelvis ...	11	1	1	..	..	..	..	7	7	..	3	3	..
Albuminuria.....	11	7	7	..	4	3	1	..	..	..	..	..	..

Post Natal Care.

Maternal morbidity ranks second only in importance to maternal mortality, and is much more often present than it should be. Every effort is made to learn of any childbirth injuries existing in mothers attending the centres, and where these are found patients are recommended for surgical or other treatment.

MIDWIVES ACTS, 1902 and 1918.

During the year 45 midwives notified the Local Supervising Authority of their intention to practise in the City, and of these 42 held the examination certificate of the Central Midwives Board, and three were registered as having been in *bona fide* practice before the passing of the 1902 Act. One midwife holding the C.M.B. certificate, and one *bona fide* midwife died.

Inspections—227 visits were paid by the Superintendent of Midwives to the homes of certified midwives for the purpose of inspecting midwifery bags and appliances, and to see that the necessary records of their work were being satisfactorily kept, also to investigate cases of ophthalmia neonatorum, septicæmia, or other abnormalities occurring in their practices. In addition, 153 visits were paid to midwives' cases on account of some abnormal condition. The results of these inspections were generally satisfactory.

The clothing and appliances of seventeen midwives were disinfected; eleven after being in contact with puerperal septicæmia or pyrexia, three after scarlet fever, and three after pemphigus.

Four handy-women were interviewed as to conduct. On investigation it was found that they had acted in emergencies.

Births attended by Midwives.—1,659 living births (a decrease of 150 on the previous year) and 42 stillbirths (one more than in 1928) were attended by midwives during the year. Midwives attended 33·2 per cent. of the net births in the City, a slightly lower percentage than in 1928. In addition midwives attended in the capacity of maternity nurses with doctors in 235 cases.

The closest co-operation and loyalty exists between the midwives practising in the City and the staff of the Health Department, and midwives are encouraged to send their cases to the ante-natal clinics. Much benefit was derived by those mothers who were sent, as well as by the midwives concerned. The midwives carry out, according to the C.M.B. rules, ante-natal care of their patients, and keep the records of their visits very accurately.

The post graduate course of six lectures with practical demonstrations was again given this year by different doctors on subjects of special interest to the midwives and Health Visitors. These lectures were given at Diana Street Centre, and were highly appreciated and of the greatest value to those who attended.

Notices for medical help sent to Local Authority by the Midwives :—

FOR THE MOTHER.		<i>During Puerperium—</i>	
<i>During Pregnancy—</i>		Rise of Temperature.....	20
Ante Partum Hæmorrhage ...	12	Fits	2
Abortions	10	Undefined Illness of Mother ..	32
Illness	5	Varicose Veins	6
	<hr/>		<hr/>
	27	Total calls for mother	307
			<hr/>
		FOR CHILD.	
<i>During Labour—</i>		Prematurity	33
Uterine Inertia	75	Discharging Eyes	33
Malpresentations	36	Cyanosis	1
Retained Placenta	6	Congenital Defects	8
Post Partum Hæmorrhage ...	11	Convulsions	1
Ruptured Perineum	92	Illness of Baby	13
	<hr/>	Still-births	3
	220	Rashes	9
			<hr/>
		Total calls for mother and child	408
			<hr/>

In 24 per cent. of the midwives' cases the services of a doctor were requisitioned.

Claims from Doctors for Fees in respect of calls from Midwives :—

	Cases
For forceps delivery.....	92
For post partum hæmorrhage	14
For illness of mother	43
For illness of child	39
For premature birth	13
For discharging eyes	21
Other	70
Specialists called in.....	8
	<hr/>
Total cases	300
	<hr/>

As there was a total number of 408 calls for medical aid from the midwives, 73·2 per cent. of these calls were paid by the Local Supervising Authority.

Four claims for *payment of midwife's fee* were received.

Ophthalmia Neonatorum.—The number of cases notified was 84, of which 72 were City cases. 70 of these were visited, the remainder being cases occurring in Hospital, or admitted to Hospital from outside areas. This number is an increase of 10 on that for 1928. The confinements were attended by :—

Doctors	29
Midwives	23
Maternity Hospital	29
Cases resident outside the City sent into Hospital for treatment	3
	—
	84
	—

In three cases the children were born outside Newcastle area, and were sent into Hospitals in Newcastle for treatment, and notified from there as suffering from ophthalmia neonatorum.

371 visits were paid to the 70 cases in the City, and the ultimate results were :—

Recovered completely	68
Unable to trace	2
	—
	70
	—

The *ophthalmia incidence* per 1,000 births for the last nine years has been as follows :—

1921	13.0
1922	9.9
1923	11.0
1924	8.0
1925	8.0
1926	9.5
1927	10.7
1928	12.9
1929	14.0

Puerperal Septicæmia and Puerperal Pyrexia.—113 cases were notified during the year—58 puerperal fever, and 55 pyrexia. 56 were from outside the City area and were admitted to Hospitals in the City. Of the remaining 57, 54 were visited. The following table shows the attendance at birth :—

	<i>Puerperal Septicæmia.</i>	<i>Puerperal. Pyrexia.</i>
Doctors	4	12
Doctors and Midwives	2	7
Midwives .....	..	10
Princess Mary Maternity Hospital Staff.....	8	9
Wingrove Hospital	1	1
	<hr/> 15	<hr/> 39
	<hr/>	<hr/>

VISITED CITY CASES TREATED IN HOSPITALS.

	<i>No.</i>	<i>Deaths.</i>
Puerperal Septicæmia	13	9
Puerperal Pyrexia	25	..

Nursing Homes Registration Act, 1927.

Every maternity and nursing home in the City was re-inspected during the year. The general standard of conduct was considered good, and only on rare occasions was it found necessary to make suggestions, and these were mostly concerning relatively unimportant details. The essential requirements, such as sufficient air space and efficient sanitation, a trained staff, numerous enough to meet all reasonable needs, scrupulous cleanliness, good book-keeping, and suitable appliances for dealing with fire, were found, without exception.

CHILDREN.

Births.—There were five thousand one hundred and twenty-six children born in the City in 1929, and of these 2,673 were boys and 2,453 girls—that is, there were 111 boys for every hundred girls. As usual, death

claimed more boys than girls—95 per thousand of the former, compared with 75 per 1,000 of the latter dying during their first year.

Illegitimate Births.—Two hundred and eleven illegitimate children were born—12 fewer than in the previous year. These died at the rate of 133 per 1,000 (compared with 84 per 1,000 legitimate births).

Birth Rate.—The birth rate continues to fall, and it reached a new low record of 18·1 per thousand in 1929. There were one thousand two hundred and nine fewer children born in the City in 1929 than were born five years ago.

Deaths.—Actually there were fewer infant deaths in 1929 than there were in the previous year, but the smaller number of births increases the infantile mortality rate to 85. From the young child's point of view, therefore, 1929 in Newcastle was not an unhealthy year.

As usual, the premature, multiple, and illegitimate births resulted in an excessive number of deaths as will be seen from the following table:—

	1925	1926	1927	1928	1929
Deaths of Children during first week of life	167	169	154	157	145
Deaths of children during first month	248	226	222	205	207
Deaths from Prematurity	118	124	122	112	126
Deaths of Twins and Triplets	50	55	41	36	49
Death-rate of Illegitimate Children (per 1,000 illegitimate births)	131	147	129	157	133

The Pre-School Child.—Our attention is constantly given to the children of toddling age, among whom so much deterioration in health is seen and has been noted in previous reports. It is gratifying to report an increase in the number of these children who are brought to the centres, as is shewn in the following table. At present they are only examined once a month, when they have a session devoted entirely to them at each of the centres. In the forthcoming year it is hoped that we shall be able to give them a special session every week.

TODDLERS ATTENDING THE NEWCASTLE CENTRES.

YEAR.	NUMBER OF CHILDREN.
1923	1,627
1924	1,726
1925	1,992
1926	2,268
1927	2,542
1928	2,591
1929	2,779

Play Centres.—The three play centres (or nursery schools, as they are usually termed) at Diana Street, Wharncliffe Street (opened in March only) and St. Peter's, continue to flourish, and are especially valued in wintry weather. The numbers attending are satisfactory, and once again public recognition is made of the kindness and self-sacrifice of the ladies who voluntarily conduct these centres.

North East Coast Exhibition.

In conjunction with the Health Authorities of Northumberland and Durham, Newcastle had a stall in the Women's Section of the Exhibition throughout the whole period of its existence, on which were displayed actual diets of fresh food—changed daily—suitable for young children. Knitted and other garments, with instructions for making them, were also shown. An additional stall was also taken at a special Child Welfare Fortnight, promoted by the proprietors of the “Evening World,” and held in their own pavilion.

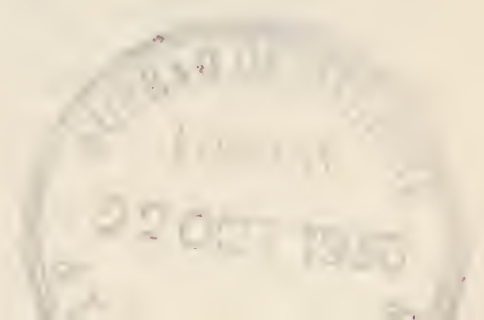
Staff Changes.

The following members of the Health Visiting Staff resigned during the year: Misses M. T. Smithson and M. Wigham.

These were replaced by Miss M. Simpson and Mrs. M. Nicholson (the latter being temporary only).

Welfare Centres.

The following table shows the geographical position of the Centres in the City, together with details of Centre days. Each of the new housing districts, such as High Heaton, Two Ball Lonnen, and Walkergate, will need a Centre, and recommendations embodied in a special report have been made to that effect.



Centre.	Address.	Women and Children.	Medical Officer.	Health Visitor.	Ante-Natal Sessions.
Benwell	Y.W.C.A. Club, Buddle Road	Monday.....	Dr. Glen Davison ...	Miss Willson.....	Friday, 2 p.m. Mr. Harvey Evers.
Byker	Corner of Dalton Street and Shipley Street	Monday..... Friday, 10 a.m.	Dr. Spinks	Miss Johnson ..	Friday, 2 p.m. Dr. Mabel Campbell.
City	Princess Mary Maternity Hospital, Jubilee Road	Wednesday...	Dr. Spinks	Miss Pritchard .	Thursday, 2 p.m. Mr. Harvey Evers.
Diana Street, Westgate ...	25, Diana Street	Tuesday..... Friday, 2 p.m.	Dr. Spinks	Miss Pottinger ..	Wednesday, 10 a.m. Mr. Harvey Evers.
Portland Street, Elswick ..	Salvation Army Rooms, Portland Street	Thursday	Dr. Glen Davison ...	Miss Hatfield ..	Tuesday, 2 p.m. Mr. Harvey Evers.
Scotswood	Denton Road	Tuesday	Dr. Spence	Miss Carr	Benwell (see above).
Shieldfield.....	St. Jude's Parish Hall, Dinsdale Road	Thursday	Dr. Spinks	Miss Mason.....	Byker (see above).
Spital Tongues.....	Dunn's Cottages	Tuesday (Afternoon only)	Dr. Mabel Campbell	Miss Worrall ..	Diana St. (see above) or Wharnccliffe Street (see below).
St. Peter's	Corner of Glasshouse Street ...	Friday	Dr. Glen Davison ...	Miss Hisco	Tuesday, 10 a.m. Mr. Harvey Evers.
Walker	Presbyterian Church Hall, Church Street	Thursday	Dr. Natrass.....	Miss Morton	Monday, 10 a.m. and 2 p.m. Mr. Harvey Evers.
Wharnccliffe Street, Scotswood Road	18, Wharnccliffe Street	Wednesday...	Dr. Mabel Campbell	Miss Shell	Tuesday, 10 a.m. Dr. Mabel Campbell.

It will be noted from the following table that the number of individuals attending the Centres continues to increase yearly.

Attendances at Maternity and Child Welfare Centres.

CHILDREN.

YEAR.	No. of Attendances.	No. of Individuals.	Average Attendance per Individual.	Average Attendance at each Session.
1920 ...	22,596	3,751	6·0	44·2
1921 ...	32,538	4,734	6·8	40·7
1922 ...	36,020	4,835	7·4	44·9
1923 ...	42,515	5,153	8·2	46·5
1924 ...	45,766	5,587	8·2	45·5
1925 ...	45,476	5,744	7·9	43·6
1926 ...	50,697	6,467	7·8	46·2
1927 ...	46,672	6,522	7·1	42·4
1928 ...	53,960	6,532	8·3	49·3
1929 ...	52,460	6,574	7·9	48·2

Sewing and Knitting Classes.

The attendances at these are well maintained, and the facilities offered and instruction given are much appreciated.

Lectures.

Various lectures or papers relating to Maternity and Child Welfare were given during the year, and the Centres were used for this purpose. Among the most important were those given to medical students, and students from the Kenton Lodge Training College. Subsequent to the latter lecture, the students were brought to the Centres in relays to see the practical work done. As all these students in both classes will at some future period come into close contact with young children, it is hoped that this experience will be of help to them.

Dried Milk.

The following table shews the quantity of dried milk distributed each month during the year :—

MONTH.	FREE.	AT COST PRICE.
	1929.	1929.
	lbs.	lbs.
January	4,754	2,855
February	4,510	2,442
March	5,563	3,518
April	4,566	2,962
May	4,412	1,897
June	5,915	4,217
July	4,449	3,075
August	4,374	3,128
September	5,810	4,084
October	5,313	3,010
November.....	5,527	3,242
December	7,401	3,152
	62,594	37,582

Children attending Centres	6,574
Children given Free Milk	2,323
Percentage.....	35·3
Expectant Mothers given Milk	237
Free Milk given to Children (lbs.)	60,475
Free Milk given to Expectant Mothers (lbs.).....	2,119
Children receiving Cost Price Milk	1,124
Percentage.....	17·1

MATERNITY AND CHILD WELFARE CENTRES, 1929

MONTH.	Ante-Natal Sessions.	Ante-Natal.		Post-Natal.		New Children.			Individuals.			Attendances.			Medical Sessions.	
		Attendances.	Individuals.	Attendances.	Individuals.	Under 12 months	Over 12 months	Total.	Under 12 months	Over 12 months	Total.	Under 12 months	Over 12 months	Total.	Number.	Average
January	28	347	254	17	16	190	19	209	1242	1221	2463	2146	1855	4001	83	48.2
February	32	351	251	24	21	150	30	180	1106	1216	2322	1931	1777	3708	92	40.3
March	38	398	276	23	20	285	42	327	1278	1240	2518	2686	2046	4732	108	43.8
April	27	317	234	19	19	258	31	289	1270	1140	2410	2370	1684	4054	83	48.8
May	25	262	198	15	15	204	27	231	1199	1148	2347	2100	1615	3715	77	48.2
June	32	325	230	11	11	239	39	278	1309	1262	2571	2701	2111	4812	92	52.3
July	24	264	204	16	16	240	25	265	1278	1068	2346	2094	1433	3527	69	51.1
August	30	281	214	11	11	242	33	275	1329	1061	2390	2506	1650	4156	88	47.2
September	40	398	260	25	21	245	64	309	1405	1367	2772	3488	2448	5936	115	51.6
October	32	335	236	18	15	199	51	250	1314	1293	2607	2492	1985	4477	92	48.6
November	32	332	238	18	15	188	40	228	1227	1330	2557	2397	2104	4501	92	48.9
December	36	321	235	17	17	175	27	202	1208	1272	2480	2534	2307	4841	98	49.4
Total	376	3931	*1348	214	*29	2615	428	3043	*3795	*2779	*6574	29445	23015	52460	1089	48.2

* Number of actual individuals during year. The same persons attend during different months, so that these figures do not represent total of column.

MATERNITY AND CHILD WELFARE CENTRES, 1929.

CENTRE.	Ante-Natal Sessions.		Ante-Natal.		Post-Natal.		New Children.			Individuals.			Attendances.			Medical Sessions.		Illegitimate.		Individuals.	
	Attendances.	Individuals.	Attendances.	Individuals.	Attendances.	Individuals.	Under 12 months.	Over 12 months.	Total.	Under 12 months.	Over 12 months.	Total.	Under 12 months.	Over 12 months.	Total.	Number.	Average Attendance.			Boys.	Girls.
Benwell	48 691	224	81 2	357	40 317	446	354	800	3173	1628	4801	92	52.2	16	418	382					
Byker.....	48 741	246	52 11	433	59 374	536	346	882	4042	2988	7030	140	50.2	25	458	424					
City Road.....	.. ..	..	.. ..	205	26 179	252	193	445	1932	2337	4269	98	43.6	14	219	226					
Diana Street	48 679	264	34 3	472	68 404	552	437	989	4247	4161	8408	139	60.5	17	480	509					
Portland Street	46 401	161	13 1	314	41 273	398	341	739	3240	1931	5171	97	53.3	14	389	350					
Scotswood .....	.. ..	..	.. ..	123	28 95	145	116	261	1410	1392	2802	92	30.5	12	131	130					
Shieldfield .....	.. ..	..	.. ..	275	56 219	318	238	556	2517	2530	5047	97	52.0	8	281	275					
Spital Tongues .....	.. ..	..	.. ..	90	77 13	111	74	185	1020	435	1455	45	32.3	2	94	91					
St. Peter's.....	47 241	85	10 7	237	23 214	342	254	596	2510	1381	3891	96	40.5	15	300	296					
Walker	92 602	213	6 ..	329	46 283	419	255	674	3242	2504	5746	97	59.2	2	355	319					
Wharnciffe St.	47 576	155	18 5	208	28 180	276	171	447	2112	1728	3840	96	40.0	13	210	237					
Total ..	376 3931	1348	214 29	3043	428 2615	3795	2779	6574	29445	23015	52460	1089	48.2	138	3335	3239					

SUMMARY OF CENTRE REPORT, 1929.

<i>Total Sessions, all Medical</i>	1,089	Average attendance at each	48·2
<i>Total Individuals</i>	6,574	Average visits per individual	7·97
<i>Total Ante-Natal Sessions</i>	376	Average attendance at each	11·0
<i>Total Ante-Natal and Post-Natal</i>			
<i>Individuals</i>	1,377	Average visits per individual	3·01
<i>Benwell Ante-Natal Sessions</i>	48	Average attendance, 16·0 ; average visits per individual	3·4
<i>Byker Ante-Natal Sessions</i>	48	Average attendance, 16·5 ; average visits per individual	3·0
<i>Diana St. Ante-Natal Sessions</i> ..	48	Average attendance, 14·8 ; average visits per individual	2·6
<i>Portland St. Ante-Natal Sessions</i>	46	Average attendance, 9·0 ; average visits per individual	2·5
<i>St. Peter's Ante-Natal Sessions</i> ...	47	Average attendance, 5·3 ; average visits per individual	2·7
<i>Walker Ante-Natal Sessions</i>	92	Average attendance, 6·6 ; average visits per individual	2·8
<i>Wharnccliffe St. Ante-Natal Sessions</i>	47	Average attendance, 12·6 ; average visits per individual	3·7
<i>Illegitimate Children Attending</i> ..	138		

Total Deaths (children attending centres) 122 (all ages).

Death Rate „ „ „ 18·5 per 1,000 (all ages).

Death Rate among all the Infants in the

 City under 1 year 85 per 1,000 births.

SEWING AND KNITTING CLASSES, 1929.

CENTRE.	SUBJECT.	TEACHER.	DAY.	Attend- ance.	Sessions.	Average.
Benwell	Sewing and Knitting	Miss Crawford	Tuesday	445	45	9.9
Byker	Sewing and Knitting	Miss Whipp	Friday	514	48	10.7
City	Knitting	Miss Whipp	Wednesday.....	1021	96	10.6
City	Sewing	Miss Robson.....	Thursday			
Diana Street	Sewing	Mrs. Churnside.....	Wednesday.....	1091	95	11.5
Diana Street	Knitting	Miss Whipp	Thursday			
Portland Street ...	Sewing and Knitting	Miss Robson.....	Tuesday	426	44	9.7
Scotswood	Sewing and Knitting	Miss Whipp	Tuesday	492	45	10.9
Shieldfield.....	Sewing	*Mrs. A. Holmes	Tuesday	196	46	4.3
Spital Tongues.....	Sewing	Miss Whipp	Monday.....	760	46	16.5
St. Peter's	Sewing	Miss Crawford	Wednesday.....	214	46	4.6
Walker	Knitting	Miss Crawford	Thursday	493	48	10.3
Wharnccliffe Street .	Sewing and Knitting	Miss Crawford	Friday	427	47	9.1

* Voluntary Worker.

NOTIFICATION OF BIRTHS ACTS.

Of the 6,120 births (gross) which were registered in the City in 1929, 5,081, or 83 per cent. were notified as follows :—

Notified by.	Gross Living Births.		Still- Births.
Medical Practitioners	453	..	20
Medical Practitioners and Midwives ..	228	..	9
Midwives	1659	..	42
Maternity Hospital	2140	..	197
Wingrove Hospital	90	..	10
Gables Maternity Home	219	..	6
Parents	8	..	..
	4,797		284

Of the 4,797 living births notified, 913 were outside cases born in Newcastle, giving a net figure of 3,884.

Of the 284 still-births, 132 were outside cases.

Still-Births.—Of the total net notifications of births received, still-births were in the following proportion :—

Year.	Percentage.	Year.	Percentage.
1922.....	3·0	1926.....	3·2
1923.....	3·0	1927.....	3·8
1924.....	2·7	1928.....	4·0
1925.....	2·9	1929.....	3·9

Still-births registered	329
Still-births notified.....	284
Percentage Notified	86
Still-births Visited	185

<i>Duration of Pregnancy.</i>	<i>No.</i>	<i>Percentage. to Total.</i>
At or under 7 months	48	25
At 7-8 months	30	16·2
At Full Time.....	107	57·8

Suggested causes of the still-births :—

	<i>Cases.</i>
(a) Ill-health of the mother	42
(b) Foetal deformities and malpresentations and uterine inertia	60
(c) Premature delivery, ante-partum hæmorrhage, etc...	22
(d) Other causes, including albuminuria.....	61

The following table shows the position in the family of the still-born child :—

	<i>Cases.</i>		<i>Cases.</i>
1st child	65	4th child	20
2nd child	30	5th child	10
3rd child	24	6th child	36

In 148 cases it was the first still-birth, in 22 the second, in 11 the third, and in 4 cases there were more than three previously still-born. 32 per cent. of the still births occurred in hospital. Seven of the mothers subsequently died.

Syphilis was returned as the cause of death in two children below the age of 1 year.

WORK OF HEALTH VISITORS.

18 Health Visitors, including the Chief Health Visitor, were engaged solely in Maternity and Child Welfare Work during 1929.

4,811 births were visited, and 17,948 re-visits were paid, an average of 4·7 visits per child. These give a total of 22,759 visits to children under 1 year.

SUMMARY OF VISITS.

	Primary.	Subsequent.	Total.
Births	4,811	17,948	22,759
Measles	3,612	5,397	9,009
Pneumonia	1,217	1,809	3,026
Diarrhœa	90	194	284
Children over One Year .....	....	....	27,205
Hospital Cases .....	....	....	263
Expectant Mothers .....	....	....	1,124
*Special Visits.....	....	....	316
Unsuccessful Visits (Outs and Removals) .....	....	....	4,397
	....	....	68,383

* Includes 14 to crippled children.

The addresses of 139 children who left the City were sent to the Medical Officers of Health for the districts to which they had gone.

Infants on Visiting List.

Of 4,694 children born in the City in 1928, 3,942 completed their first year in 1929, and of the remainder:

387 died,
 129 left the City,
 207 disappeared and could not be traced,
 29 were visited only once.

The following figures are therefore based on the 3,942 who completed the first year, *plus* the 387 who died, making in all a total of 4,329, and of that total 2,193 or 50·6 per cent., attended the Welfare Centres. Of these 108 died, a rate of 49·2 per 1,000, compared with 85 per 1,000 for the whole City.

Influence of Housing Conditions.—During the 22 years, 1908—1929, 83,935 births have been under the supervision of the Health Visitors, and of these 9,296 died. The following table shows the numbers of births and deaths in the various classes of house:—

YEAR.	HOUSES OF							
	1 Room.		2 Rooms.		3 Rooms.		4 Rooms or more.	
	Births	Deaths	Births	Deaths	Births	Deaths	Births	Deaths
1908.....	247	32	515	57	312	32	13	2
1909.....	339	53	694	86	168	32	29	3
1910.....	536	62	723	68	51	4	7	2
1911.....	462	68	794	79	77	6	20	1
1912.....	465	48	746	60	110	6	25	1
1913.....	241	40	348	28	91	3	17	3
1914.....	245	36	375	31	90	11	25	3
1915.....	631	104	2,140	306	1,416	144	692	74
1916.....	611	121	2,333	343	1,584	180	756	85
1917.....	730	104	2,199	284	1,349	150	776	84
1918.....	607	90	2,018	270	1,285	144	766	83
1919.....	664	111	2,056	306	1,358	188	810	102
1920.....	843	167	2,155	291	1,529	171	1,052	121
1921.....	1,263	140	2,523	234	1,651	134	1,036	88
1922.....	1,223	159	2,267	241	1,342	97	655	61
1923.....	1,357	149	2,187	243	1,155	86	637	54
1924.....	1,440	188	1,946	200	1,096	100	666	62
1925.....	1,395	151	1,803	192	1,001	89	654	50
1926.....	1,472	153	1,774	162	1,108	94	720	63
1927.....	1,334	132	1,772	168	988	62	721	68
1928.....	1,114	109	1,553	159	936	72	692	69
1929.....	1,064	101	1,526	138	1002	87	737	61
22 years ..	18,283	2,318	34,447	3,946	19,699	1,892	11,506	1,140
Death rate per 1,000 births		126·8		114·6		96·0		99·1

Walking and Talking.—Of the 3,942 children who completed their first year, 82·2 per cent. were walking at the end of the year, and 88·8 per cent. were talking at the end of the year.

Illnesses.—Among the children visited 293, or 7·4 per cent., contracted measles; 147, or 3·2 per cent., contracted whooping cough; 144, or 3·7 per cent., contracted diarrhoea; 536, or 13·6 per cent., contracted bronchitis or pneumonia.

The mortality per 1,000 births in 1929 was as follows :—

1 roomed dwellings	95
2 roomed dwellings	90
3 roomed dwellings	87
Dwellings over 3 rooms	83

Details as to the stated **Feeding** of the 4,329 children under supervision during the year are given in the following table :—

	FEEDING.					
	BREAST.		MIXED.		ARTIFICIAL.	
	No.	Per-centage.	No.	Per-centage.	No.	Per-centage.
At First Visit	4,091	94·5	56	1·3	182	4·2
Deaths in First Year of above Children.....	324	7·9	25	44·6	38	20·9
At time of Death	238	5·8	20	35·7	129	70·9
Surviving Children (3,942) at 9 months	1,722	43·7	499	12·6	1,721	43·7

Illegitimacy.—211 illegitimate children were born ; of these 28 died, a death-rate of 133 per 1,000, as compared with 84 among legitimate children.

Details as to children who should have attained the age of 5 years during 1929 :—

Well and attending school	1,808
Well and not attending school	93
Ill and not attending school	42
Left City or failed to trace	634
Died in 2nd year	113
Died in 3rd year	35
Died in 4th year	10
Died in 5th year	7
Total surviving	1,943
Total deaths	165
Total left City.....	634
Total reported on	2,742

The visiting of children over one year of age was only commenced in June, 1925, so that the number reported on is only about half of the children who completed their first year in 1925.

Voluntary Workers.

One or more voluntary workers are now attached to each Centre, and all have given most freely of their services throughout the year. Mrs. Roy Williamson—the President of the Voluntary Association—has kindly provided the following report:—

REPORT OF THE VOLUNTARY WORKERS AT THE CHILD WELFARE CENTRES FOR 1929.

At the beginning of 1929 the Society of Voluntary Workers, which consisted largely of members of the original “Mothers and Babies Welcome Society,” decided to form themselves into a Society called “The Newcastle upon Tyne Mothers’ and Children’s Welfare Society.” This Society has enlarged the scope of its activities under its new name, but it trusts that the provision of voluntary workers for the Welfare Centres may continue to be an important part of its work.

The work of these ladies during 1929 has been similar to that carried on in previous years. Those who supervised the sewing classes held each week at each centre have organised jumble sales, helped to provide clothes for needy families, and have in general given friendly help and advice to mothers in matters which do not come within the scope of the professional workers, as such.

The weekly play centres at Diana Street and St. Peter’s have continued to be well attended. A new one, at Wharncliffe Street, was started in April by Miss Nancy Harper, and already it has a good and regular attendance.

Voluntary workers have also supplemented the work of the Health Visitors by doing secretarial work and weighing on doctors’ days at the busier centres.

Christmas parties were held as usual at most centres, both in connection with the sewing classes and the play centres.

St. Peter's Centre has lost a valuable worker and friend through the resignation of Miss Helen Browne upon her leaving Newcastle. It was to Miss Browne that this centre owed its beginning, and she is much missed by the mothers and by her fellow workers there.

Another resignation to be reported with regret was that of Miss Gwladys Harper, who most successfully ran St. Peter's play centre for many years. Her place has been taken by Miss Vivienne Lawson.

Some of the funds of the Society have been devoted to helping very needy mothers to pay for surgical requirements, artificial teeth, spectacles, etc., to sending mothers and babies for convalescence to the Rose Joicey Home, and to providing toys and apparatus for the play centres. A number of nightdresses were made during the year and sent, through Miss Merz, to the Matron of the Rose Joicey Home to be used by mothers and children who need them whilst in the Home.

Grateful thanks are due to those friends who have so kindly given toys and clothes to voluntary workers for distribution and use at the centres, and particularly to Miss Matthews, of Wylam, who once again this year gave a number of rag dolls for the children to play with whilst at the centres.

ELSA M. WILLIAMSON,

*President of the Newcastle upon Tyne
Mothers' and Children's Welfare Society.*

I am, Sir,

Your obedient servant,

A. F. G. SPINKS, M.D.,

Maternity and Child Welfare Medical Officer.

Health Department,

Town Hall,

Newcastle upon Tyne,

8th June, 1930.

INCLUDING REPORTS OF THE
RESIDENT MEDICAL OFFICER OF THE
INFECTIOUS DISEASES HOSPITAL
AND THE BACTERIOLOGIST.

III.—INFECTIOUS DISEASE.

FEVERS, FOOD POISONING,
CITY HOSPITALS FOR INFECTIOUS DISEASES,
DISINFECTION, BACTERIOLOGY.

INFECTIOUS DISEASES.

NUMBER OF CASES PER 1,000 POPULATION IN 1929.

DISTRICT.	ATTACK-RATE PER 1,000 POPULATION.						
	Small-pox.	Typhus	Scarlet Fever.	Diphtheria.	Enteric Fever and Continued Fever.	Puerperal Fever.	Erysipelas.
England and Wales	0.28	..	3.05	1.59	0.07	0.06	0.45
NEWCASTLE UPON TYNE	0.07	..	2.06	0.91	0.07	0.06	0.78
Hull	0.00	..	3.12	2.84	0.03	0.06	0.54
Leeds	0.05	..	7.26	1.12	0.03	0.06	0.73
Bradford	0.23	..	5.99	1.39	0.05	0.14	0.61
Sheffield.....	0.02	..	9.05	1.47	0.05	0.16	0.65
Manchester	0.01	..	3.01	0.99	0.05	0.19	0.57
Salford .....	..	..	2.70	2.90	0.03	0.07	0.60
Liverpool.....	0.00	..	4.57	2.68	0.03	0.05	0.81
Nottingham	0.01	0.00	3.65	2.59	0.05	0.07	0.56
Leicester	1.30	..	2.11	1.03	0.01	0.04	0.64
Stoke-on-Trent	1.68	..	1.22	0.96	0.04	0.86	0.48
Birmingham	0.00	..	2.46	1.64	0.03	0.10	0.64
Cardiff	0.03	..	2.85	3.28	0.08	0.15	0.36
Bristol	0.00	..	2.83	2.90	0.08	0.05	0.45
Portsmouth.....	..	..	3.01	2.93	0.04	0.09	0.28
†London	0.43	..	3.60	2.68	0.08	4.46 *	0.49
Gateshead	0.49	..	1.78	0.74	0.02	0.02	0.008
South Shields	2.35	..	1.37	0.52	..	0.09	0.46
Tynemouth	2.31	0.00	1.97	2.14	0.17	0.00	0.89
Sunderland	0.02	0.00	0.90	0.78	0.05	0.07	0.67
Middlesbrough .....	..	..	2.13	0.51	0.02	0.10	0.61
†Northumberland	0.14	..	1.79	0.58	0.17	0.02	0.52
†Durham	0.50	..	2.06	1.44	0.05	0.03	0.66

† Administrative County. * Per 1,000 births.

DEATHS (CORRECTED) FROM NOTIFIABLE INFECTIOUS DISEASES
AND NON-NOTIFIABLE ZYMOTIC DISEASES, EXCLUSIVE OF TUBERCULOSIS.

WARD.	Diphtheria.	Erysipelas.	Scarlet Fever.	Enteric Fever.	Pneumonia.	Cerebro-Spinal Fever.	Encephalitis Lethargica.	Measles and Rubella.	Puerperal Fever.	Small-pox.	Whooping Cough.	Zymotic Diarrhoea (under 2 years of age).	Dysentery.	Malaria.
St. Nicholas'	..	..	..	..	5	..	..	1	..	..	..	..	..	..
St. Thomas'	1	2	..	1	10	2	..	1	..	..	..	1	..	..
St. John's	..	1	1	..	27	1	1	5	1	..	3	7	..	..
Stephenson	..	..	1	..	25	1	..	10	1	..	5	4	..	..
Armstrong	..	..	..	..	25	1	..	7	1	..	5	3	..	..
Elswick	1	1	..	..	11	..	..	5	..	..	..	5	1	..
Westgate	..	..	..	..	27	..	1	5	..	..	2	1	1	..
Arthur's Hill	..	..	..	..	4	..	..	..	..	..	..	..	1	..
Benwell	2	1	..	..	14	..	..	1	4	..	3	3	..	..
Fenham	2	..	..	..	11	1	..	1	2	..	..	1	..	..
All Saints'	1	1	..	1	29	..	..	13	1	..	2	6	..	..
St. Andrew's	..	..	..	..	13	1	..	2	..	..	3	2	..	..
Jesmond	..	..	..	..	6	1	..	..	..	..	..	..	..	..
Dene	2	2	..	1	13	..	..	1	..	..	1	1	..	..
Heaton	1	..	..	..	5	2	..	1	1	..	1	..	..	..
Byker	1	..	2	..	16	1	1	5	..	..	..	5	..	..
St. Lawrence	..	2	..	..	27	..	1	6	..	..	1	7	..	1
St. Anthony's	2	..	1	..	16	..	..	6	..	..	..	8	..	..
Walker	1	1	..	1	46	3	..	4	..	..	1	12	1	..
CITY	14	11	5	4	330	14	4	74	11	..	27	66	3	1

Note :---All deaths in Public Institutions have been allotted to the Wards to which they properly belong.

For particulars of deaths from **TUBERCULOSIS** see Section IV.

NOTIFIED CASES OF INFECTIOUS DISEASE AND DEATHS (GROSS).

EXCLUSIVE OF TUBERCULOSIS.

AGES OF CASES OF INFECTIOUS DISEASE NOTIFIED AND DEATHS REGISTERED DURING THE YEAR 1929.

NOTIFIABLE DISEASE.	AT AGES—YEARS.												GROSS TOTAL				NET TOTAL.					
	Under 1.		1 to 5		5 to 15.		15 to 25.		25 to 45.		45 to 65.		65 and up-wards.		Ages not known.		1929.		1928.		1929.	
	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Diphtheria (including Membranous Croup)	2	1	77	6	138	6	38	..	12	2	7	1	..	274	16	271	11	259	14	219	14	219
Erysipelas.....	9	2	10	..	11	..	20	..	62	1	90	5	..	238	14	251	20	220	11	85	11	85
Scarlet Fever	1	1	147	3	357	..	52	..	28	..	3	..	..	588	4	515	2	584	5	543	5	543
Enteric Fever .....	..	..	1	..	7	..	8	1	7	..	11	4	..	36	10	26	5	19	4	35	4	35
Cerebro-Spinal Fever	5	4	4	5	7	1	4	4	1	1	1	1	..	22	19	15	7	15	14	10	14	10
Acute Poliomyelitis	1	..	8	1	3	2	1	..	..	..	..	..	..	13	3	6	1	7	..	1	..	1
Acute Polio-Encephalitis ..	..	..	..	..	1	..	..	..	..	..	..	..	..	1	..	3	3	1	..	..	..	..
Encephalitis Lethargica ..	..	..	..	2	4	2	4	..	8	7	2	2	..	18	11	26	12	12	4	4	..	4
Puerperal Fever .....	..	..	..	..	..	..	18	11	38	32	1	..	..	58	43	45	28	17	11	40	11	40
Puerperal Pyrexia .....	..	..	..	..	..	..	21	..	32	..	..	..	..	55	..	33	..	40	..	15	..	15
Ophthalmia Neonatorum ..	84	..	..	..	..	..	..	..	..	..	..	..	..	84	..	74	..	72	..	9	..	9
Pneumonia	113	68	426	100	262	19	158	20	218	52	211	76	..	1473	384	1537	323	1372	330	222	330	222
Malaria .....	..	..	1	..	..	..	..	..	2	..	3	1	..	6	1	4	..	6	1	..	1	..
Dysentery.....	6	..	55	1	25	2	3	..	13	..	7	..	..	110	3	66	10	100	3	101	3	101
Smallpox .....	..	..	..	..	1	..	8	..	4	..	6	..	..	21	..	80	..	21	..	21	..	21
†Measles and Rubella	302	20	2371	53	1164	4	27	..	6	..	1	..	..	3872	77	4174	56	3855	74	108	74	108
°Chickenpox	65	..	289	..	757	..	20	..	14	..	4	..	..	1149	..	1534	1	1147	..	1	..	1
	588	96	3389	169	2737	41	382	36	445	98	347	90	123	25	7	8018	585	7747	471	1414	471	1414

* Cases from outside the City excluded for the purpose of calculating Net Death Rates.
 † Ministry of Health Regulations, 1920. ° Temporarily notifiable.

WARD DISTRIBUTION OF INFECTIOUS DISEASES (NET).

WARD.	Diphtheria.	Erysipelas.	Enteric Fever.	Scarlet Fever.	Cerebro-Spinal Fever.	Poliomyelitis.	Acute Polio-Encephalitis.	Encephalitis Lethargica.	Measles.	Rubella.	Puerperal Fever.	Puerperal Pyrexia.	Ophthalmia Neonatorum.	Acute Primary Pneumonia.	Acute Influenzal Pneumonia.	Smallpox.	Chickenpox.	Malaria.	Dysentery,	Total.
St. Nicholas'	..	1	..	1	..	..	..	..	67	..	..	..	1	11	..	..	..	..	..	81
*St. Thomas'	20	16	25	25	2	..	..	1	106	7	..	..	1	32	1	..	42	3	2	261
St. John's	10	8	3	3	1	..	..	..	200	9	1	..	5	124	9	..	43	..	3	418
Stephenson	9	9	18	18	2	..	..	..	449	9	2	2	12	122	11	..	71	..	3	721
Armstrong	8	12	37	37	1	..	..	1	391	18	2	4	7	64	12	..	67	..	7	632
Elswick	12	8	20	20	..	..	..	1	178	4	1	..	2	32	2	..	59	..	3	322
Westgate	20	11	19	19	..	..	..	2	229	7	..	3	..	78	6	..	40	..	..	416
†Arthur's Hill	10	22	18	18	..	..	..	1	69	6	..	1	2	26	9	1	43	..	..	208
Benwell	20	17	43	43	..	..	..	..	287	10	4	1	6	80	13	..	97	..	..	578
Fenham	22	12	49	49	2	..	..	..	207	9	3	2	7	45	5	4	29	..	..	396
All Saints'	9	11	12	12	..	..	..	1	320	1	1	4	6	119	1	1	68	..	1	555
St. Andrew's	12	11	7	7	1	..	..	..	123	1	..	2	1	48	2	..	77	..	..	289
Jesmond	9	5	14	14	1	1	..	1	24	8	..	1	..	19	..	..	41	..	..	124
Dene	10	10	38	38	..	..	..	2	42	9	..	2	..	45	7	..	136	..	1	303
Heaton	5	5	19	19	1	..	..	1	72	1	1	..	3	30	8	..	75	..	3	224
Byker	21	13	67	67	1	1	..	..	198	2	1	3	9	63	7	5	73	..	4	469
St. Lawrence	16	11	89	89	1	1	..	1	277	6	..	2	6	64	10	7	63	3	4	562
St. Anthony's	19	14	42	42	..	2	1	..	235	4	..	2	3	81	7	3	18	..	8	439
†Walker	27	24	63	63	2	2	..	..	264	6	1	11	1	163	16	..	105	..	61	749
CITY	259	220	584	584	15	7	1	12	3738	117	17	40	72	1246	126	21	1147	6	100	7747

* Includes Royal Victoria Infirmary and Fleming Memorial Hospital for Sick Children.

† " Poor Law Institution and Wingrove Hospital.

† " City Hospital for Infectious Diseases, Walker Gate.

For particulars of cases of **TUBERCULOSIS**, see Section IV.

WARD INCIDENCE OF INFECTIOUS DISEASES (NET).
EXCLUSIVE OF TUBERCULOSIS.

NOTIFIABLE DISEASES—Cases per 1,000 Population.																				DEATHS per 1,000 Pop.		
WARD.	Diphtheria	Erysipelas.	Scarlet Fever.	Enteric Fever.	Cerebr -Spinal Fever.	Poliomyelitis.	Acute Polio Encephalitis.	Encephalitis Lethargica.	Measles (including Rubella).	Puerperal Fever.	Puerperal Pyrexia.	Smallpox.	Chickenpox.	Ophthalmia Neonatorum.	Pneumonia.	Malaria.	Dysentery.	Measles. (including Rubella).	Whooping Cough.	Zymotic Diarrhœa (under 2 years of age).		
St. Nicholas' ..	..	0.37	0.37	..	..	..	..	..	24.8	..	..	..	..	0.37	4.07	..	..	0.37	..	..
*St. Thomas' ..	1.46	1.17	1.83	0.22	0.15	..	..	0.07	8.3	..	..	..	3.08	0.07	2.42	0.22	0.15	0.07	..	0.07
St. John's	0.66	0.53	0.20	0.13	0.07	..	..	..	13.9	0.07	..	..	2.85	0.33	8.82	..	0.20	0.33	0.20	0.46
Stephenson ...	0.49	0.49	0.98	0.11	0.11	..	..	..	24.9	0.11	0.11	..	3.86	0.65	7.22	..	0.16	0.54	0.27	0.22
Armstrong	0.52	0.78	2.41	0.06	0.06	..	..	0.06	26.6	0.13	0.26	..	4.36	0.46	4.95	..	0.46	0.46	0.33	0.20
Elswick	0.96	0.64	1.60	..	..	..	..	0.08	14.5	0.08	..	..	4.71	0.16	2.71	..	0.24	0.40	..	0.40
Westgate	1.33	0.73	1.27	0.06	..	..	..	0.13	15.7	..	0.20	..	2.67	..	5.60	..	..	0.33	0.13	0.06
†Arthur's Hill ..	0.89	1.95	1.60	..	..	..	..	0.09	6.7	..	0.09	0.09	3.82	0.18	3.11	..	..	..	..	..
Benwell	1.09	0.93	2.36	..	..	..	..	..	16.3	0.22	0.05	..	5.32	0.33	5.10	..	..	0.05	0.16	0.16
Fenham	1.22	0.67	2.72	..	0.11	..	..	..	12.0	0.17	0.11	0.22	1.61	0.39	2.77	..	..	0.05	..	0.05
All Saints'	0.52	0.63	0.69	..	..	..	..	0.06	18.5	0.06	0.23	0.06	3.91	0.35	6.90	..	0.06	0.75	0.12	0.35
St. Andrew's ..	1.03	0.95	0.60	0.34	0.09	..	..	..	10.7	..	0.17	..	6.62	..	4.30	..	..	0.17	0.26	0.17
Jesmond	0.82	0.45	1.27	..	0.09	0.09	..	0.09	2.9	..	0.09	..	3.73	..	1.73	..	..	..	..	..
Dene	0.63	0.63	2.39	0.06	..	..	..	0.13	3.2	..	0.13	..	8.57	..	3.28	..	0.06	0.06	0.06	0.06
Heaton	0.33	0.33	1.25	..	0.07	..	..	0.07	4.8	0.07	..	..	4.92	0.19	2.49	..	0.19	0.07	0.07	..
Byker	1.22	0.76	3.90	0.06	0.06	0.06	..	..	11.6	0.06	0.17	0.29	4.25	0.52	4.07	..	0.23	0.29	..	0.29
St. Lawrence ..	0.91	0.62	5.10	0.06	0.06	0.06	..	0.06	16.1	..	0.11	0.40	3.58	0.34	4.20	0.17	0.23	0.34	0.06	0.40		
St. Anthony's ..	1.23	0.90	2.71	..	..	0.13	0.06	..	15.4	..	0.13	0.19	1.16	0.19	5.68	..	0.52	0.39	..	0.52
†Walker	1.24	1.10	2.90	0.14	0.09	0.09	..	..	12.4	0.05	0.51	..	4.83	0.05	8.23	..	2.80	0.18	0.05	0.55
CITY	0.91	0.78	2.10	0.07	0.05	0.02	0.003	0.04	13.6	0.06	0.14	0.07	4.05	0.25	4.84	0.02	0.35	0.26	0.09	0.23		

* Includes Royal Victoria Infirmary and Fleming Memorial Hospital for Sick Children. † Includes Poor Law Institution and Wingrove Hospital.
‡ Includes City Hospital for Infectious Diseases, Walker Gate.
For Particulars of TUBERCULOSIS, see Section IV.

HOUSEHOLDS AFFECTED WITH INFECTIOUS DISEASES,
EXCLUSIVE OF TUBERCULOSIS, MEASLES AND CHICKENPOX.

DISEASES.	HOUSEHOLDS WITH						Mili- tary or Naval Cases	Insti- tutions *	TOTAL CASES. (Gross).	Cases from outside of City.	NET CASES.
	Single Cases	2 Cases each	3 Cases each	4 Cases each	5 Cases each	6 Cases and over					
Diphtheria (including Mem- branous Croup)	188	16	3	..	1	..	..	40	274	15	259
Erysipelas	173	6	..	..	..	..	..	53	238	18	220
Scarlet Fever	400	47	15	1	1	1 (7)	..	33	588	4	584
Enteric (or Typhoid Fever) ..	15	1	..	..	..	..	..	19	36	17	19
Cerebro-Spinal Fever	14	..	..	..	..	..	..	8	22	7	15
Poliomyelitis	7	..	..	..	..	..	..	6	13	6	7
Polio-Encephalitis	1	..	..	..	..	..	..	..	1	..	1
Encephalitis Lethargica	12	..	..	..	..	..	..	6	18	6	12
Puerperal Fever	18	..	..	..	..	..	..	40	58	41	17
Puerperal Pyrexia	40	..	..	..	..	..	..	15	55	15	40
Ophthalmia Neonatorum	72	..	..	..	..	..	..	12	84	12	72
Pneumonia	1235	50	2	1	..	..	1	127	1473	101	1372
Smallpox	15	1	..	1	..	..	..	..	21	..	21
Malaria	4	..	..	..	..	..	1	1	6	..	6
Dysentery	78	9	1	..	..	..	..	11	110	10	100
TOTAL	2272	130	21	3	2	1 (7)	2	371	2997	252	2745

* See next page.

Schools and Infectious Disease.—It was not found necessary to close any school on account of infectious disease during the year.

PUBLIC INSTITUTIONS AND INFECTIOUS DISEASE.

The following notifications were received during the year :—

INSTITUTIONS, &c.	Diphtheria.	Erysipelas.	Scarlet Fever.	Encephalitis Lethargica.	Measles and Rubella.	Puerperal Fever.	Puerperal Pyrexia.	Pneumonia.	Chickenpox.	Ophthalmia Neonatorum.	Enteric Fever.	Poliomyelitis.	Polio-Encephalitis.	Cerebro-Spinal Fever.	Smallpox.	Malaria.	Dysentery.	TOTAL. *
Royal Victoria Infirmary.....	4	25	4	4	2	8	..	93	3	2	14	2	..	7	..	..	..	168
Fleming Memorial Hospital...	25	2	3	..	12	..	..	3	3	..	3	4	..	1	..	..	11	67
Wingrove Hospital.....	1	19	2	1	24	1	..	13	9	..	..	..	..	..	..	..	..	70
City Hospital for Infectious Diseases (Patient) .....	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	1
Deaf and Dumb Institution..	..	1	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	2
St. Joseph's Home .....	..	2	..	..	..	..	..	2	..	9	..	..	..	..	..	..	..	2
Maternity Hospital .....	..	..	4	..	..	29	14	1	4	..	..	..	..	..	..	2	..	58
Military Barracks	1	..	1	..	..	..	..	1	2	..	..	..	..	..	..	..	..	9
Northern Counties Orphanage	..	..	3	..	..	..	..	1	..	..	1	..	..	..	..	..	..	6
St. Vincent's Home .....	..	..	9	..	..	..	..	..	..	..	..	..	..	..	..	..	..	10
Eye Infirmary	1	1	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	3
Convent of the Sacred Heart.	..	1	3	1	..	1	1	1	..	..	1	..	..	..	..	..	..	3
Nursing Homes .....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	6
Poor Children's Holiday Association Shelter	2	..	..	..	2	..	..	12	..	..	..	..	..	..	..	..	..	2
Common Lodging Houses ...	..	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	16
Royal Victoria School for the Blind	3	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	3
Babies' Hostel, 33, West Parade .....	..	..	..	..	1	..	..	1	..	..	..	..	..	..	..	..	..	2
National Children's Orphanage .....	..	..	..	..	1	..	..	..	1	..	..	..	..	..	..	..	..	2
Walker Hostel	3	..	3	..	..	..	..	..	..	..	..	..	..	..	..	..	..	6
St. Cuthbert's Grammar School .....	..	..	1	..	..	..	..	1	..	..	..	..	..	..	..	..	..	1
Salvation Army Hostel .....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1
TOTAL	40	53	33	6	43	40	15	128	22	12	19	6	..	8	..	2	11	438

* Does not include any cases belonging to the City which could properly be assigned to their homes.

MILK SUPPLY IN RELATION TO INFECTIOUS DISEASES.

The source of the milk supply was ascertained in every case of fever and diphtheria. In no instance was there reason to suspect that milk was responsible for the conveyance of infection.

6 cases of scarlet fever and 5 cases of diphtheria occurred at premises of various kinds, in connection with which business was carried on.

SCARLET FEVER.

Notifications of 584 cases were received during the year, and there were 5 deaths, equivalent to a mortality of 0·9 per cent.

DIPHTHERIA.

259 cases were notified during the year, and 14 died, a case mortality of 5·4 per cent., as compared with 3·1 in 1928.

Antitoxin was distributed free to medical practitioners in the City as follows :—

Number of medical practitioners who made application for antitoxin	31
Number of phials of antitoxin supplied	176
Number of cases of diphtheria notified	259
Number of notified cases removed to Hospital	250
Number of Hospital cases in which antitoxin was injected prior to admission	47

The fatality of the disease in recent years is shown in the subjoined table :—

Year.	DIPHTHERIA CASES. (All Forms.)	
	Number.	Case Mortality (per cent.).
1909	456	12·7
*1910	443	9·0
1911	507	7·5
1912	501	6·6
1913	368	7·6
1914	362	7·7
1915	275	9·5
1916	272	10·3
1917	226	14·6
1918	250	9·2
1919	320	6·9
1920	348	6·9
1921	353	6·2
1922	254	5·9
1923	200	5·0
1924	256	6·6
1925	187	3·7
1926	202	8·4
1927	225	7·1
1928	262	3·1
1929	259	5·4

* Antitoxin first distributed gratis April, 1910.

Particulars of the type of the disease as noted in cases sent to hospital will be found later in the section dealing with the City Hospitals.

MEASLES AND RUBELLA.

3,855 cases (including 117 of rubella) were notified, and there were 74 deaths (corrected) in 1929, representing a death rate of 0·26 per 1,000 population, as compared with 0·20 in 1928, and a case mortality of 1·92 per cent. of notified cases (net).

DEATHS, 1929 (CORRECTED).

MONTH.	YEARS OF AGE.							Total.
	0-1.	1-2.	2-3.	3-4.	4-5.	5-10.	Over 10.	
January	3	8	3	..	..	..	1	15
February ...	3	5	2	1	..	1	..	12
March	4	6	4	..	..	1	..	15
April	2	6	4	..	..	..	..	12
May	2	4	..	3	..	..	..	9
June	2	1	..	1	..	..	..	4
July	2	1	..	..	..	..	..	3
August	1	..	..	..	..	..	..	1
September ..	..	1	..	..	..	..	..	1
October ....	..	1	..	..	..	..	..	1
November...	..	..	..	..	..	..	..	..
December ..	..	..	..	..	..	1	..	1
TOTAL ...	19	33	13	5	..	3	1	74

The following table shows the deaths in the various wards, and at different age periods :—

WARD.	Under 3 months.	3 and under 6 months.	6 and under 9 months.	9 and under 12 months.	1 and under 2 years.	2 and under 3 years.	3 and under 4 years.	4 and under 5 years.	5 and under 10 years.	Over 10 years.	TOTALS.
St. Nicholas'	1	..	..	..	..	..	1
St. Thomas'	1	..	1
St. John's.....	1	2	2	..	..	..	..	5
Stephenson	1	5	3	..	..	1	..	10
Armstrong	5	1	1	..	..	..	7
Elswick.....	3	1	..	1	..	..	..	5
Westgate	1	..	..	2	1	1	..	..	..	..	5
Arthur's Hill
Benwell	1	..	..	..	..	..	1
Fenham	1	..	..	..	..	..	..	..	1
All Saints'	1	1	3	5	1	1	..	..	1	13
St Andrew's	1	..	1	..	..	..	..	..	2
Jesmond
Dene	1	..	..	..	1
Heaton	1	..	..	..	..	..	1
Byker	1	2	2	..	..	..	..	5
St. Lawrence	2	3	1	..	..	..	..	5
St. Anthony's	1	2	2	1	..	..	..	6
Walker	3	..	..	..	1	..	4
TOTAL	1	1	3	14	33	13	5	..	3	1	74

Each Health Visitor visited and revisited selected cases occurring in her district. By this arrangement each case is seen immediately on receipt of the notification, and advice is given regarding the nursing and isolation

of the patient. The cases are kept under supervision until they recover, and should subsequent cases occur in the family they are recorded.

Measles Cases, including Rubella, notified during 1929.

Cases notified by Medical Practitioners	2,986
Cases found by Health Visitors	856
Cases notified by Parents	22
Cases found from Returns of Deaths	4
Education Office	4
	<hr/>
	3,872 gross.
	3,855 net.
	<hr/>

Of the total number of measles cases notified, 3,612, in 2,745 households (or 93·7 per cent.) were visited by the Health Visitors, and 5,397 revisits were paid, a total of 9,009 visits.

The following particulars refer to the cases visited :—

	DWELLINGS OF					Total houses visited.
	1 room.	2 rooms.	3 rooms.	4 rooms.	More than 4 rooms.	
Families	482	1,047	658	415	143	2,745
Children	1,177	3,051	1,737	1,053	357	7,375
Cases	661	1,386	848	532	*185	3,612
Percentage of Cases to						
Children	56·2	45·4	48·8	50·5	51·8	49·0
Cases developing Pneumonia	56	63	19	20	5	163
Percentage of cases develop-						
ing Pneumonia	8·5	4·5	2·2	3·8	2·7	4·5
Deaths from Measles	25	26	10	5	1	67
Cases notified as Measles,						
Death certified as due to						
Pneumonia, Bronchitis or						
Diarrhœa	5	4	1	..	..	10
Case Mortality per cent. ...	4·5	2·2	1·3	0·9	0·5	2·1

* In addition to these cases, 217 cases were reported in better-class houses and were not visited. Amongst these no deaths occurred, so that the actual mortality rate in houses of more than 4 rooms was 0·2 per cent. Total un-visited cases, 260 ; 217 in better class houses, 43 in institutions.

Medical Attendance.—In 99·2 per cent. of the cases visited a doctor was in attendance.

Condition of Patient.—In 82·7 per cent. of the cases visited the disease ran a normal course, but bronchitis, pneumonia or other complications developed in the remainder.

Attendance at Schools.—978, or 27·1 per cent. of the affected children visited had previously attended school, and 2,634, or 72·9 per cent. had never attended school. In connection with 1,529 of the latter cases, however, other children in the infected houses were scholars, equivalent to 42·3 per cent. of the total cases.

The following were the ages of children (visited) suffering from measles :—

Under 1 year	292
1-2 years	519
2-3 years	574
3-4 years	609
4-5 years	586
5-6 years	539
Over 6 years	493
	<hr/>
	3,612
	<hr/>

WHOOPIING COUGH.

27 deaths occurred from whooping cough. The particulars are as follows :—

MONTH.	YEARS OF AGE.						Total.
	0-1.	1-2.	2-3.	3-4.	4-5	5-10.	
January .....	..	1	..	..	..	..	1
February .....	..	..	..	..	..	..	..
March	3	3	..	1	..	..	7
April .....	..	..	..	..	..	..	..
May	1	4	..	..	..	..	5
June .....	..	..	..	..	..	..	..
July .....	..	1	..	..	..	..	1
August	3	1	..	..	..	..	4
September .....	..	..	1	1	..	..	2
October .....	..	1	2	..	..	..	3
November .....	..	..	..	1	..	..	1
December .....	..	2	1	..	..	..	3
Total	7	13	4	3	..	..	27

The death rate in 1929 was equivalent to 0·09 per 1,000 population, as compared with 0·18 in 1928.

THE ENTERIC GROUP OF FEVERS.

36 cases of enteric fever were discovered in the City during the year. Of these 19 were Newcastle cases, 4 of whom died, 3 at the City Hospital and the fourth, who was too ill to be moved, at her home.

13 of the remaining 17 patients had been admitted to the Royal Victoria Infirmary, 3 to the Fleming Memorial Hospital, and one to a nursing home, from outside areas. One patient died in the Royal Victoria Infirmary, and the remainder were transferred to Walker Gate after the diagnosis of an enteric fever had been confirmed. Five of them died.

In all 34 cases were admitted to the Hospital from the City, and these, with four others, admitted at the request of neighbouring Authorities, comprised the total of 38 cases treated there.

Of the 40 cases met with, 21 were bacteriologically proved to be due to the *Bacillus Typhosus*. Of these 7, or 33·3 per cent., died. 18 suffered from Paratyphoid B. fever, and in this series there were 5 deaths, representing a mortality rate of 27·7 per cent. The remaining case, which died in the Royal Victoria Infirmary, was clinically and pathologically typhoid, but actual bacteriological proof was not obtained.

There were two well defined outbreaks of the enteric group of fevers during the year, one in the months of February and March, and a smaller one in December.

The former comprised 12 cases (4 fatal) of Paratyphoid B. fever, which occurred in two female surgical wards at the Royal Victoria Infirmary. Many of the patients infected had already been operated on for severe

surgical conditions, and this doubtless accounts for the unusually heavy mortality rate of 25 per cent., as contrasted with that met with in ordinary cases of Paratyphoid B. (*e.g.*, 5–10 per cent.). No actual source of infection was ever traced in this series, but it is probable that the infection was introduced into each ward from outside, and spread from case to case by the ordinary methods of direct and indirect contact. A maid who had suffered from the same disease three years previously, and who had been working in one of the infected wards, was highly suspect, but after a prolonged investigation at Walker Gate, extending over a month, the possibility of her being a carrier was dismissed. One nurse in attendance on these patients at the Infirmary contracted the disease in a mild form, and made an uneventful recovery. The outbreak was brought to an end after closing the wards for admissions, and inoculating the patients still remaining against the disease. It is gratifying to know that the entire nursing staff of the Royal Victoria Infirmary is now systematically protected against the enteric group of diseases, in the same way as are both the nursing and domestic staffs at Walker Gate.

The second outbreak, much smaller in dimensions, but even more serious in its potentialities for spread, occurred as the result of the sale of contaminated mussels in the City about the middle of November. In this instance the disease was the true typhoid fever, and not the milder Paratyphoid B. infection. The details of the outbreak are as follows :—

Two unemployed workmen residing in Newcastle gathered mussels from beds in the River Blyth (within tidal limits) on an undetermined date in the second week

of November, 1929. The beds from which the mussels were obtained are comparatively near the Bedlington and the Port Fever Hospitals, and notices prohibiting the collection of the shell-fish are displayed in the vicinity. The Blyth Port Authority and the Bedlington Urban District Council have these beds constantly under supervision, but this does not prevent frequent gathering of the mussels, nominally for bait. The shell-fish were brought to Newcastle and sold in three well defined areas in the City over a period of about a week.

The first case of typhoid was diagnosed on December 7th, the date of onset being December 2nd, 1929. Four other cases followed in quick succession, and each gave a history of eating mussels from the suspected source. The amount of mussel ingested varied from one or two to a considerable meal. The type of the disease was severe, and two of the five cases died as a result of the infection.

On representation of the facts to the Blyth and Bedlington Authorities, steps were taken by these bodies to maintain even stricter supervision of the infected mussel beds.

In 14 Newcastle cases, which could not be attributed to either of the outbreaks already described, no definite source of infection was ascertained, but in three cases at least the disease commenced shortly after the return of the patients from their summer holidays. These had been spent in various parts of the country, and presumably the infection in these cases was not contracted in the City.

DIARRHŒA.

There were in all 93 deaths from the disease, equal to a death rate of 0·33 per 1,000 population, and this number included 66 deaths of children under two years of age.

TYPHUS.

No case of this disease occurred during the year.

SMALLPOX.

21 cases of smallpox occurred in Newcastle during the year, the last of these being reported on the 22nd June. This number is surprisingly small considering the prevalence of the disease in other Tyneside towns during the earlier months of the year.

The cases generally were of the “mild” type, though several patients suffered from unpleasantly severe attacks, which made them realise how much vaccination might have spared them. One family which did not believe in vaccination saw four of its members in succession attacked by the disease. Nevertheless, they persisted in their refusal to undergo vaccination, and in their doubts as to its efficacy in the prevention of smallpox.

It cannot be insisted too frequently that the so-called “mildness” of the present day type of smallpox is often a misnomer, and that those who prefer to have an attack of smallpox rather than be vaccinated are running grave personal risks, in addition to neglecting their duty to the community. It is probable that the present mild form is merely a phase in the periodic cycle of the disease, and that the older classical variety of smallpox may come into our midst again with startling rapidity.

983 direct contacts were kept under supervision by the sanitary inspectors until the incubation period of the disease for each individual contact had expired. In addition 145 contacts were detained in the smallpox hospital—isolation side—for varying periods.

The following are the particulars, courteously furnished by the Clerk to the Guardians, of infant **Vaccination** in Newcastle during recent years. (Walker, which belongs to the Tynemouth Rural area for registration purposes, is not included).

Year.	Births Registered.	Successful Vaccinations	Unsuccessful Vaccinations	Exemption Certificates.	
				Number.	Percentage to Total Births
1905	7,958	7,264	27	65	0·8
1906	7,721	6,733	28	92	1·2
1907	7,610	6,702	16	94	1·2
*1908-12	35,265	27,240	114	3,398	9·6
1913-17	34,296	21,251	33	7,144	20·8
1918-22	34,372	19,011	95	9,262	26·9
1923-27	31,290	19,658	30	5,542	17·7
1928	5,780	4,320	19	912	15·8
1929	5,638	3,555	33	1,092	19·4

* Vaccination Act, 1907, came into force.

The *Public Vaccinators* and *Vaccination Officers* for the various districts of the City are :—

Dene, Heaton and Byker Municipal Wards :—

DR. J. MACRAE, 4, Benton Terrace.

Deputy—DR. A. SUTCLIFFE, 1, Lesbury Road.

St. Anthony's and St. Lawrence Municipal Wards :—

DR. RICHARD DAGGER, 1, Rothbury Terrace.

Deputy—DR. ERIC C. DAGGER, 1, Rothbury Terrace.

Walker District :—

DR. T. J. RYAN, Welbeck Road.

Deputy—DR. MACHALE, Welbeck Road.

All Saints', St. Nicholas', St. Andrew's, Jesmond, and St. Thomas' Municipal Wards :—

DR. FRANK HAWTHORN, 10, Ellison Place.

Deputy—DR. O. W. OGDEN, 4, St. Mary's Terrace.

Fenham, Arthur's Hill, Westgate and St. John's Municipal Wards :—

DR. A. M. PATERSON, 116, Elswick Road.

Deputy—DR. H. L. TAYLOR, 242, Westgate Road.

Stephenson, Elswick, Armstrong and Benwell Municipal Wards :—

DR. G. D. NEWTON, 105, New Bridge Street.

Deputy—DR. J. B. SINSON, 105, New Bridge Street.

Wingrove Hospital :—

DR. G. P. HARLAN.

Vaccination Officers :—

Western—W. W. CUMMINGS, 80, Northbourne Street,

Eastern—WM. GARRETT, 34, Harbottle Street.

CHICKENPOX

1,147 cases were notified. There were no deaths.

ERYSIPELAS.

220 cases of this disease were notified and there were 11 deaths.

PUERPERAL SEPTICÆMIA AND PUERPERAL PYREXIA.

57 cases were notified, with 11 deaths. Inquiries were made concerning 54 of these. 16 of the cases were attended by doctors.

INFLUENZA AND PNEUMONIA.

These diseases accounted for 457 deaths as against 330 last year.

Total deaths at age periods.

Under 5 years.	5-15.	15-25.	25-45.	45-65.	65 and over.	Total.
152	20	16	57	110	102	457

As will be seen from the above figures, 152, or 33 per cent., of the deaths occurred below the age of 5 years.

Appended is a statement of the total net deaths at all ages in the City from influenza and pneumonia during 1929 and the previous 17 years :—

YEAR.	INFLUENZA.	PNEUMONIA.
1912	18	248
1913	19	339
1914	22	424
1915	22	433
1916	36	392
1917	27	418
1918	680	540
1919	604	561
1920	90	468
1921	65	411
1922	273	495
1923	15	342
1924	105	415
1925	41	366
1926	49	291
1927	103	339
1928	45	285
1929	127	330

1,372 cases of pneumonia, including influenzal-pneumonia, were notified. For the ages and ward distribution, see pages 99 and 100.

Of that number 1,217, or 89 per cent., were visited by Health Visitors. It was found that of these 1,217 visited cases, 722, or 59 per cent., were primary pneumonia, 249, or 20 per cent., were cases of influenzal-pneumonia, and 246, or 20 per cent., were cases of pneumonia following other diseases.

Sex.—59 per cent. of the cases were males.

Ages.—The ages of the 1,217 cases visited were as follows :—

Under 1 year.....	105
1-5 years	404
5-15 years	229
15-25 years	121
25-45 years	160
45-65 years	148
and over 65 years	50
	<u>1,217</u>

Of these, 213 were school children.

Housing.—207 cases occurred in 1 roomed dwellings, 468 cases occurred in 2 roomed dwellings, 246 cases occurred in 3 roomed dwellings, and 296 cases occurred in more than 3 roomed dwellings.

Type of House.—553 cases occurred in flats, 477 cases in tenements, and 178 in self-contained houses, and 9 in lodging houses.

Previous History—

There was a previous history of	Measles	in 582 cases.
„ „ „	Whooping Cough	in 364 cases.
„ „ „	Influenza	in 257 cases.
„ „ „	Frequent winter Coughs and Colds	in 999 cases.
„ „ „	Pneumonia	in 298 cases.
„ „ „	Tuberculosis	in 46 cases.

Hospital Treatment.—222 cases of pneumonia were treated in the Infectious Diseases Hospital. The majority of these were from houses where there was overcrowding or other unsuitable home conditions. 38 of these patients died, giving a case mortality of 17·1 per cent.

Deaths.—279, or 23 per cent. of the visited cases of pneumonia died.

VENEREAL DISEASES.

Syphilis was certified as the cause of death in 13 cases.

The work of the treatment clinic has been continued successfully. 1,788 old and new cases attended 27,339 times as out-patients. 17 cases accounted for 615 in-patient days. Of the 988 new cases 308 were syphilis, 529 gonorrhœa, 3 soft chancre, and 148 were conditions other than venereal. 72 per cent. were males.

2,900 doses of salvarsan substitutes were administered to out-patients, and 9 to in-patients.

2,667 Wasserman reactions were carried out by the College of Medicine, and 166 microscopical examinations of pathological material were made by the College and 1,306 at the treatment clinic. The irrigation stations for males and for females in connection with the clinic have been in full use during the year.

44 medical practitioners in the City are qualified to receive free supplies of arseno-benzol compounds. 18 made application for these supplies during the year and 1,345 doses were given.

Newcastle Residents Notified as Attending other Centres.

Cases.—Syphilis, 9 ; gonorrhœa, 10 ; soft chancre, nil ; conditions other than venereal, 3.

Attendances.—91.

Doses of salvarsan substitute given, 6.

In-Patients.—In-patient days, 54. Doses of salvarsan substitutes administered, 5.

Information as to ophthalmia neonatorum will be found in Section II. (The Child).

ENCEPHALITIS LETHARGICA.

During the year 1929, 26 notifications of encephalitis lethargica were received.

Eight of these referred to patients in the post-encephalitic state of the disease, whose symptoms for the most part were those of the so-called Parkinsonian syndrome with mask-like face, tremors of the limbs, and mental deterioration. All these cases were investigated, and in

every one a history of slight influenza or transitory diplopia occurring at a date some years previous was obtained. These apparently trivial illnesses had undoubtedly been atypical attacks of encephalitis lethargica; and upon them, after a greater or less interval, had followed a progressive retrogression in health, both bodily and mental. The approximate dates of the original attacks in this series were as follows :—2 in 1920 ; 1 in 1921 ; 2 in 1924 ; 2 in 1925 ; and 1 in 1927. The long interval between the primary attack and the development of sequelæ, the apparent cures and remissions, and the association of mild and fugitive influenza-like illnesses and diplopias with the very gravest forms of paralysis and mental disorder, are well recognised characters of this treacherous and horrible disease. To the remaining 18 notifications must be added two cases admitted to Walker Gate as enteric fever and epidemic cerebro-spinal meningitis respectively, which on investigation proved to be encephalitis lethargica.

Of the eight patients treated at the City Hospital as proved or suspected cases of the disease, four were proved not to be encephalitis lethargica. Of the four definite cases one died ; one, though slightly incapacitated, has been able to do light work since discharge from hospital ; the remaining two made complete recoveries, and have been able to resume their old employment.

The results of the 13 non-hospital cases were not so good. Seven died ; one is totally incapacitated ; another, though suffering from a certain degree of disability, is able to do light work ; three are completely cured, and have returned to their former employment, and one it has been found impossible to trace.

Re-Survey of all Cases of Encephalitis Lethargica.—

It is now 11 years since encephalitis lethargica first appeared in Newcastle, and every other year an opportunity has been found to make a re-survey of all cases of the disease known to have occurred in the City, or to have been reported therefrom since the commencement of the epidemic in 1919. Post encephalitic cases, when met with, have been placed, as far as possible, under the years in which their primary attack occurred.

The last biennial survey was made in 1928, but the cases brought to notice during 1929 have been incorporated in the table then prepared. There is now a series of 337 cases of which records are available. These have been grouped in accordance with the classification employed by Dr. Allan C. Parsons in his report to the Ministry of Health, published in 1928. Patients who recovered are shown as (*a*) totally incapacitated, (*b*) suffering from sequels which interfere with their old occupation, (*c*) suffering from sequels which do not interfere with their old occupation, and (*d*) completely cured.

The cases have been divided into two categories : (*a*) those admitted to the City Hospital, and (*b*) those treated elsewhere—a few in other institutions, the majority at home. This has been done because the signs and symptoms of encephalitis lethargica are frequently produced by other conditions, some mild, such as constipation and neuritis, others, *e.g.*, cerebral hæmorrhage, cerebral tumours, tuberculous and septic meningitis, even more fatal than the disease they counterfeit. It is only by calculating death, disability and recovery rates on cases definitely proved to have been encephalitis lethargica, that a true idea of the severity of that disease can be obtained. Accordingly it will be seen that

although these various rates have been calculated for both groups of cases, those for the City Hospital will prove more reliable, as all non-encephalitic cases have been excluded from their totals, as the result of clinical, laboratory, and post-mortem investigations. The figures based on 113 traced and proved cases of encephalitis lethargica treated in the City Hospital from 1919 to 1929 speak for themselves—roughly 41 per cent. are dead, 15 per cent. are totally incapacitated (including 7 per cent. who are or have been in mental hospitals), 7 per cent. are able to do some light work, from 18 per cent. to 19 per cent, though still suffering from minor disabilities, can follow their old occupations, and a similar proportion are completely cured. The figures for the non-hospital cases are even worse. This is due in great part to the inclusion of many of the serious conditions mentioned above, but doubtless the fact that these cases may have lacked some of the careful treatment and attention the others received at Walker Gate, may have helped to diminish their prospects of recovery. The following table gives details of all the cases reported since 1919 :—

HOSPITAL CASES.

NON-HOSPITAL CASES.

YEAR.	NUMBER OF PATIENTS.						NUMBER OF PATIENTS.					
	Notifications.	Admitted.	Proved to be Encephalitis Lethargica.	Cases otherwise diagnosed Encephalitis Lethargica.	Total Hospital Cases.	Not traced.	Dead.	Totally Incapacitated.	With Sequels interfering with usual occupation.	With Sequels not interfering with old occupation.	Cured.	
1919.....	2	2	1	..	1	1	..	..	..	..	..
1920.....	12	5	4	3	7	..	4	1 (1M)	..	..	1
1921.....	18	6	4	1	5	1	..	2 (1M)	..	1	2	
1922.....	7	4	2	..	2	..	..	2 (1M)	1	..	..
1923.....	12	2	1	..	1	..	1	..	..	..	2
1924.....	133	76	62	2	64	5	22	9 (3M)	3	14	11	
1925.....	52	26	16	3	19	..	10	2 (1M)	1	1	5	
1926.....	46	15	10	3	13	2	4	..	2	2	3	
1927.....	26	13	5	..	5	1	2	..	1	1	..	
1928.....	11	3	2	..	2	..	2	..	..	..	..
1929	18	5	2	2	4	..	1	..	1	..	3	
Total ...	337	157	109	14	123	10	46	17 (8M)	8	21	21	
Pe rcentages based on 113			on 113	traced	Hospital cases..	113	40.7	15.0 (7.1M)	7.1	18.5	18.5	
Pe rcentages based on 154			on 154	traced	Non-Hospital ca ses	154	54.6	17.5 (3.2M)	5.2	7.8	14.9	

The figures in brackets, e.g., (1M), indicate the number of Patients who are, or have been, in Mental Hospitals as a result of Encephalitis Lethargica.

ACUTE POLIOMYELITIS.

7 cases occurred in the City. There were no deaths.

CEREBRO-SPINAL FEVER.

15 cases were reported during the year, with 14 deaths.

BACILLARY DYSENTERY.

It will be remembered that one of the epidemiological features of the year 1928 was the discovery of a number of cases of bacillary dysentery in the City. This disease is one of the characteristic bowel disorders of tropical climates, but its presence in the temperate zone is not unfamiliar. The principal signs and symptoms of the disease are fever, abdominal pain, and the frequent passage of diarrhœic stools containing blood and mucus. The causal bacillus is excreted in the stools, and infection is generally conveyed by contaminated foodstuffs, dirty hands, contact with an actual case or carrier, and by means of flies. The disease is notifiable, and in addition practitioners have been requested to report any suspected case, even though definite proof of its being dysentery has not been obtained.

During 1929, 300 cases were notified, and of these 123 were proved to be bacillary dysentery. Of the latter number 10 were extra-mural cases. In all there were 4 deaths attributable to the disease.

The majority of the cases were isolated in institutions, and of the 123 proved cases 101 were admitted to Walker Gate, where two died. There were two small hospital outbreaks, one at the City Hospital in a diphtheria ward, where 7 cases occurred. These were of a mild type,

and all the patients attacked recovered rapidly. In this instance it is almost certain that the disease was introduced by a diphtheria patient, who was also a dysentery carrier. The other outbreak, which comprised 5 cases, occurred at the Fleming Memorial Hospital. The disease was brought into this institution by a patient who, on admission, was suffering from indefinite signs of gastrointestinal disorder.

Though dysentery is particularly liable to occur in hospitals and wards where children are treated, it is rare that such cases are attended by fatal results, unless the patient is suffering from some other severe disease at the time of infection with dysentery. The constant supervision of the patients in such institutions, more particularly where the nursing staff is alive to the existence of the disease, is of great importance in that it ensures that special precautions are taken immediately a child is found to be suffering from the peculiar type of diarrhoea characteristic of dysentery. In domiciliary cases this careful supervision is rarely available, and unfortunately children, and adults also, have often been ill for several days before admission to the City Hospital.

Although more prevalent during the spring and summer months of 1929, dysentery was present throughout the year. Its relation to summer diarrhoea has not been determined completely as yet, but it may be said that their respective seasonal incidences do not seem to coincide entirely. The circumstances and history of all the cases were carefully investigated with a view to obtaining information as to the probable sources of infection. The possibility of the existence of carriers who might have acquired the disease while on foreign service, was also considered. Prolonged enquiries along these lines elicited no definite incriminable cause or source

of the infection. The only outstanding features were that the disease did not attack to any extent infants under the age of one year ; that it was commonest among children from 1 to 2 ; most dangerous between the age limits of 5 to 15 ; that girls, on the whole, escaped infection to a greater extent than boys, and that the latter were generally more severely affected.

The age, sex, and mortality incidence of the whole series of cases, are given in the following table :—

	Under 1.		1-2.		2-5.		5-15.		15-25.		25-45.		over 45.		Total.		All.
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
Total No. of Cases .	2	4	14	11	23	14	14	17	2	1	7	6	4	4	66	57	123
Fatal Cases . . . . .	..	..	..	..	2	..	2	..	..	..	..	..	..	..	4	..	4
Non-Fatal Cases...	2	4	14	11	21	14	12	17	2	1	7	6	4	4	62	57	119

Further, the disease appeared to bear some definite relation to overcrowding—Walker (particularly Rochester Dwellings) and Westgate being more severely involved than other wards.

The hospitalisation of cases at Walker Gate has been of advantage from two points of view. Firstly, it means that a focus of infection has been removed ; secondly, that to a certain degree the overcrowding of the dwelling has been reduced.

It is interesting to note that in the first eleven months of the period March, 1928, to December, 1929, there were 76 cases with nine deaths occurring in 62 outbreaks, of which 11, or 17·7 per cent., were multiple. The corresponding figures for the last eleven months were 117 cases with 4 deaths, occurring in 98 outbreaks, 10 of which were multiple, a percentage of 10·2.

During the latter eleven months of the period under review medical practitioners became increasingly aware of the prevalence of the disease, and utilised to greater extent and advantage the facilities for treatment provided at Walker Gate.

It is usual in an outbreak of this kind to find one particular organism as the cause of all the cases, but this series was peculiar in that no fewer than six have been found in association with the disease, namely, four types of the Flexner Dysentery Bacillus, the Sonne Bacillus, and a newly isolated germ, which has been called the Newcastle Bacillus by its discoverers—Dr. F. H. A. Clayton and Dr. S. H. Warren.

Bacteriological investigations were carried out very systematically, and no case was discharged from hospital or from supervision unless the stools which form the main material for transmitting the disease were free from the causal organism.

The distribution of these organisms among the cases is as follows :—

	FLEXNER.				Sonne Bacillus.	Newcastle Bacillus.	Totals.
	W.	X.	Y.	Z.			
Total No. of Cases ...	50	5	1	31	32	4	123
Fatal Cases	2	..	..	2	..	..	4
Non-Fatal Cases.....	48	5	1	29	32	4	119

The question arises as to the significance of the outbreak. Are these cases a brand new manifestation of a disease hitherto unknown in the City, or has it always been present, though in smaller numbers, and of a minor degree of severity?

It is probable that dysentery has always been present in this country. Records of its existence go back to the time of Edward I., who died of the disease at Burgh-on-Sands in 1307. During the eighteenth century Newcastle was a veritable hotbed of the disease, and in the nineteenth century it often featured in the records of the Newcastle upon Tyne Dispensary. Throughout the history of the disease there have been periods when it has practically disappeared, or if present, has been exceedingly mild and modified in type, only to return in cyclical fashion with high incidence and heavy mortality. Whether this present outbreak, which has now been with us for two years, is to be regarded as the beginning, or as the peak of a wave of activity on the part of the dysentery organisms, it is impossible to say. The best hope of keeping the invader within bounds, and of limiting its severity, lies in the careful investigation of all cases as they occur, and in the employment of patient research and enquiry.

Diseases Admitted—1929.

AFTER OBSERVATION PROVED TO BE:—

SENT IN AS	Number.	Scarlet Fever.	Diphtheria.	Diphtheria Carriers.	Enteric Group Fevers.	Dysentery.	Measles.	Rubella.	Varicella.	Anthrax.	Pertussis.	Epidemic Cerebro-Spinal Meningitis.	Other forms of Meningitis.	Poliomyelitis.	Encephalitis Lethargica.	Pneumonia.	Bronchitis.	Influenza.	Other Respiratory Diseases.	Erysipelas.	Skin and Septic Conditions.	Puerperal Pyrexia.	Tonsillitis.	Gastro-enteritis.	Other Gastro-Intestinal Diseases.	Ophthalmia Neonatorum.	General Diseases.	Injuries.	Unclassified.
Scarlet Fever	568	538	7	2	1	1	1	3	..	4	3	..	8
Diphtheria	281	3	217	13	3	1	3	1	..	8	2	25	5
Diphtheria Carriers	16	..	1	15	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Enteric Group Fevers.....	62	37	1	3	..	1	3	3	2	..	10	..	2
Dysentery	197	..	..	..	..	100	1	..	..	..	1	..	..	..	..	..	1	..	..	..	..	..	87	2	..	..	..	5
Measles	93	1	..	..	..	..	87	..	..	..	1	..	..	..	..	2	..	..	..	..	1	..	..	..	..	..	1	..
Rubella.....	4	..	..	..	..	..	..	3	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1
Varicella	13	1	..	..	..	..	..	..	11	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..
Anthrax	2	..	..	..	..	..	..	..	..	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Pertussis	18	..	..	..	..	..	..	..	..	..	15	..	..	..	..	1	1	..	..	..	..	..	..	..	..	..	..	1
Epidemic Cerebro-Spinal Meningitis.....	12	..	..	..	..	..	..	..	..	..	..	7	2	..	1	..	..	..	..	..	..	..	..	..	1	..	..	1
Other forms of Meningitis	8	..	..	..	..	..	..	..	..	..	..	3	2	..	..	..	1	..	..	..	..	..	..	..	..	2	..	..
Poliomyelitis	1	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Encephalitis Lethargica .	6	..	..	..	..	..	..	..	..	..	..	..	..	..	2	..	..	..	..	..	..	..	..	..	..	3	..	1
Pneumonia	246	..	1	..	1	..	4	3	212	5	2	1	1	2	..	13	..	1
Bronchitis	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..
Influenza	23	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	23	..	..	..	..	..	..	..	..	..	..
Other Respiratory Diseases	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..
Erysipelas.....	87	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	83	2	1	..	..	..	..	..	..
Skin and Septic Conditions	11	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	11	..	..	..	..	..	..	..
Puerperal Pyrexia	11	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	10	..	..	1	..	..	..
Tonsillitis	11	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	11	..	..	..	..	..
Gastro-enteritis	4	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	1	..	..	..
Other Gastro-intestinal Diseases	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	..	..	..
Ophthalmia Neonatorum.	9	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	9	..	..
General Diseases.....	10	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	10	..	..
Injuries.....	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	..
Unclassified	14	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	4	..	..	..	..	10
TOTALS	1713	543	219	28	38	101	103	5	12	2	21	10	8	1	1	222	11	25	10	85	17	11	44	93	11	9	42	3	35

CITY HOSPITALS FOR INFECTIOUS DISEASES.

Accommodation.

NAMES AND SITUATION OF HOSPITALS.	TOTAL AVAILABLE BEDS.
City Hospital for Infectious Diseases, Walker Gate (including Phthisis Pavilions, 106 Beds).....	338
New pavilion for 44 tuberculosis patients opened in May, 1929.	
Smallpox and Isolation Hospitals, Town Moor	172

City Hospital, Walker Gate.

YEAR.	Population of the City.	Number of Beds at Hospital for Fever Cases.	Total Admissions (exclusive of Phthisis and Smallpox).	Percentage of Scarlet Fever, Diphtheria and Enteric Fever Cases Admitted to Cases Notified.
1890	182,866	104	219	21·3
1900	213,039	104	290	38·6
1909	263,064	172	1,090	78·0
1910	265,077	172	912	83·0
1911	267,261	172	1,110	83·1
1912	269,193	172	1,542	86·4
1913	271,295	172	1,286	88·3
1914	271,523	172	1,835	78·9
1915	278,107	232	1,886	90·5
1916	278,107	232	1,380	87·0
1917	278,107	232	1,303	87·5
1918	278,107	232	1,245	87·5
1919	275,099	232	1,370	84·3
1920	286,061	232	1,710	86·4
1921	278,400	232	1,683	82·4
1922	281,600	232	1,032	86·3
1923	283,800	232	991	92·6
1924	285,900	232	1,502	90·5
1925	286,300	*232	1,711	86·4
1926	284,700	*232	1,397	89·1
1927	288,500	*232	1,493	89·7
1928	281,500	*232	1,294	92·9
1929	283,400	232	1,713	89·1

* 30 of these beds were occupied by Tuberculosis patients.

CITY HÔSPITAL, WALKER GATE.

(Fever Pavilions).

Admissions during the year—1,713.

The average *daily number* of patients in the hospital was 97, exclusive of 98 cases of Phthisis.

RATE PER CENT. OF CASES REMOVED TO HOSPITAL TO CASES NOTIFIED.

	1890	1895	1900	1905	1910	1915	1920	1921	1922	1923	1924	1925	1926	1927	1928	1929
Scarlet Fever	13.4	33.0	35.0	50.1	84.5	91.3	85.7	82.3	84.7	91.9	90.4	85.0	86.6	88.6	91.9	94.7
Diphtheria	8.3	28.7	40.0	36.8	80.1	89.1	89.1	82.7	91.7	93.6	90.2	94.1	93.3	95.2	94.6	96.5
Enteric Fever	38.9	48.0	54.5	52.0	90.5	87.0	90.0	71.4	84.2	100.0	96.6	96.4	90.9	78.9	95.5	94.7
All cases of the above, together with Continued and Typhus Fever and Cerebro-Spinal Fever, etc.	21.3	34.6	38.6	47.8	83.0	90.5	86.4	82.4	86.3	92.6	90.5	86.0	87.2	89.7	91.8	93.8

Diseases and Mortality Rates.

MORTALITY OF CASES TREATED IN HOSPITAL AS COMPARED WITH CASES NOT
REMOVED DURING 1929.

DISEASE.	HOSPITAL.			NOT REMOVED.		
	Total Cases. (Verified)	Deaths.	Case Mortality per cent.	Total Cases.	Deaths.	Case Mortality per cent.
Scarlet Fever	543	4	0.74	31	..	..
Diphtheria ...	219	12	5.5	9	3	33.3
Enteric Group of Fevers	38	11	28.9	1	1	100

Present Death Rates compared with those of Previous Years.

RETURN SHOWING THE NUMBER OF CASES OF
SCARLET FEVER, DIPHTHERIA, AND ENTERIC FEVER ADMITTED TO HOSPITAL
AND MORTALITY RATES PER CENT.

1891-1900.

YEARS.	NUMBER OF CASES ADMITTED TO HOSPITAL.			NUMBER OF DEATHS.			CASE MORTALITY PER CENT.		
	Scarlet Fever.	Diph- theria.	Enteric Fever.	Scarlet Fever.	Diph- theria.	Enteric Fever.	Scarlet Fever.	Diph- theria.	Enteric Fever.
1891-1895 ..	1105	92	277	34	26	51	3.1	28.3	18.4
1896-1900 ..	1087	103	442	41	21	86	3.8	20.6	19.5

1915-1924.

1915-1919 ..	3,402	998	194	99	89	21	2.9	9.0	10.8
1920-1924 ..	3,919	1,037	78	37	73	9	0.9	7.5	11.6

1925-1929.

1925.....	1,036	151	20	16	9	3	1.5	6.0	15.0
1926.....	831	153	23	15	15	2	1.8	9.8	8.7
1927.....	750	200	17	6	17	2	0.8	8.5	11.5
1928.....	452	185	25	2	9	5	0.4	4.9	20.0
1929	543	219	38	4	12	11	0.7	5.5	28.9
5 years ..	3,612	908	123	43	62	23	1.2	6.8	18.7

Admissions and Deaths, 1929.

DISEASE.	ADMISSIONS.												DEATHS.													
	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	TOTAL.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	TOTAL.
Scarlet Fever	20	22	17	18	32	24	28	23	72	68	118	101	543	..	1	..	1	..	..	..	1	1	2	1	..	4
Diphtheria	29	27	22	16	13	5	9	17	17	19	24	21	219	..	2	1	1	..	..	..	1	1	1	3	..	12
Diphtheria Carriers	5	4	3	5	..	2	2	1	3	3	7	1	28	..	1	2	..	..	..	1	1	2	..	..	..	11
Enteric Group Fevers.....	2	9	4	3	1	14	14	8	7	4	8	2	38	..	1	3	2	1	1	..	1	1	..	..	3	2
Dysentery.....	6	1	7	15	22	10	1	4	5	1	5	1	101	..	1	3	2	1	1	..	1	1	..	..	1	2
Measles	15	18	11	15	22	10	1	4	1	1	5	1	103	..	1	3	2	1	1	..	1	1	..	1	..	2
Rubella .....	..	..	1	1	2	1	..	..	..	..	..	..	5	..	..	..	..	..	..	..	..	..	..	..	..	14
Varicella	1	..	3	..	1	..	1	..	1	1	1	3	12	..	..	..	..	..	..	..	..	..	..	..	..	..
Anthrax .....	..	..	..	2	..	1	1	1	2	2	3	2	2	..	1	1	..	..	..	..	..	1	..	..	..	..
Pertussis	2	1	3	2	..	..	1	1	3	..	..	..	21	..	1	1	..	..	..	..	..	1	2	..	5	
Epidemic Cerebro-Spinal Meningitis.....	..	..	..	..	..	2	1	1	1	3	2	..	10	..	..	1	..	1	2	1	..	1	2	..	8	
Other forms of Meningitis..	..	..	1	1	1	..	1	..	2	1	..	1	8	..	..	1	1	1	2	1	..	2	1	..	7	
Poliomyelitis .....	..	..	..	..	..	1	1	2	..	..	..	..	1	..	..	1	..	..	..	..	..	..	..	..	1	1
Enecephalitis Lethargica ..	..	..	1	..	..	1	14	2	..	..	..	..	4	..	..	1	2	2	..	2	3	2	3	..	38	
Pneumonia	17	38	30	17	16	12	14	14	16	14	17	17	222	..	9	5	2	2	3	2	2	2	2	2	..	..
Bronchitis.....	..	3	3	2	1	..	..	..	1	1	..	..	11	..	..	..	..	..	..	..	..	..	..	..	..	..
Influenza .....	..	20	4	..	1	..	..	..	1	..	1	..	25	..	..	..	..	..	..	..	..	..	..	..	..	..
Other Respiratory Diseases ..	..	1	1	1	1	1	6	9	4	12	2	2	10	..	1	1	..	..	..	1	2	..	..	1	..	8
Erysipelas.....	5	9	5	3	3	2	3	..	2	1	15	12	85	..	1	1	..	..	..	1	2	..	2	..	..	..
Skin and Septic Condition ..	3	2	1	1	1	3	..	..	2	1	3	1	17	..	..	..	..	..	..	..	..	..	..	..	..	1
Puerperal Pyrexia	2	1	2	1	1	2	3	4	1	2	1	2	11	..	..	..	..	..	..	..	..	..	..	..	..	..
Tonsillitis	8	2	5	7	4	2	11	4	2	2	2	3	44	..	..	..	..	..	..	..	..	..	..	..	..	..
Gastro-Enteritis	1	1	..	6	6	6	11	12	18	24	4	4	93	..	..	..	..	..	..	..	1	3	..	..	..	4
Other Gastro-Intestinal Diseases	4	1	..	..	2	..	2	1	..	..	1	..	11	..	..	..	..	..	..	..	..	..	..	..	..	..
Ophthalmia Neonatorum ..	..	1	4	..	1	..	4	1	2	..	1	..	9	..	1	1	..	..	..	2	..	..	..	..	..	..
General Diseases	3	7	5	2	6	3	4	1	6	..	5	..	42	..	1	1	..	..	..	2	1	1	1	1	..	6
Injuries .....	..	5	6	1	3	..	1	1	3	2	..	..	3	..	..	..	..	..	..	..	..	..	..	..	..	..
Unclassified	2	..	..	3	3	..	7	1	3	2	2	1	35	..	..	..	..	..	..	..	..	..	..	..	..	..
TOTALS	125	173	139	119	131	89	107	100	163	164	222	181	1713	10	16	16	6	5	7	8	11	14	13	7	121	

Length of Stay in Hospital of Early Fatal Cases.—

The following cases died within a short period after their admission to Hospital :—

	<i>Within 24 hours.</i>	<i>Within 48 hours.</i>
Scarlet Fever	1	..
Diphtheria	8	1
Dysentery	1	..
Measles with Broncho-pneumonia	2	1
Pertussis with Broncho-pneumonia.....	1	..
Epidemic Cerebro-spinal Meningitis	2	1
Pneumonia	9	4
Erysipelas	1	..
Puerperal Pyrexia .....	..	1
Gastro-enteritis.....	1	1
Septicæmia .....	..	1
Acute Nephritis	1	..
	—	—
	27	10
	—	—

Average stay in Hospital during the last Twenty-two Years.

YEARS.	All Cases.		Scarlet Fever.		Diphtheria (including carriers).		Enteric Fever.		Other Diseases.	
Aver- age	No.	Average Stay in Days	No. .	Average Stay in Days	No.	Average Stay in Days	No.	Average Stay in Days	No.	Average Stay in Days
1908-12	1,054	46·7	599	51·7	326	41·3	68	46·3	61	29·6
1913-17	1,538	39·6	929	45·6	220	39·9	70	47·4	318	20·6
1918-22	1,408	31·2	758	37·1	215	43·2	15	46·6	420	16·8
1923-27	1,419	31·9	751	35·2	185	44·3	21	54·0	462	21·1
1928 ..	1,294	22·5	452	29·3	205	33·6	25	44·5	612	12·9
1929 ..	1,713	21·7	543	29·7	247	29·6	38	42·2	885	13·6

DIPHTHERIA.

Of the 219 cases admitted to Hospital, 169 were simple faucial or tonsillar cases, of whom 4 died, a case mortality of 2·4 per cent. ; in a group of 1 nasal and 2 conjunctival cases there was no mortality ; 11 faucio-pharyngeal cases had also involvement of the nasal passages, and 2, or 18·2 per cent., of these died.

There were 36 cases of laryngeal or tracheal diphtheria, of whom 6, or 16·6 per cent., died. In 10 of these cases the obstruction was so considerable as to require tracheotomy immediately upon admission to the City Hospital. Of these, 3 died—a case mortality of 30 per cent. The case mortality of the whole series of 219 cases was 5·5 per cent. Against this must be placed the high mortality of complicated types of the disease—those affecting the larynx and trachea, and the faucio-pharyngeal cases with nasal involvement.

With regard to the faucio-pharyngeal cases, ignorance and failure of parents to recognise the serious significance of the early signs of diphtheria account very largely for the high death rate in this type of the disease. When diagnosed early, the disease can be arrested almost immediately by injection of anti-toxin. On the other hand, delay permits the diphtheria germ to spread, and the considerable toxæmia which ensues renders the patient liable to the innumerable complications which so often lead to a fatal issue.

So far as the laryngeal and tracheal types of the disease are concerned, the record show that during the 10 years from 1920 to 1929, 352 such cases have been admitted to the City Hospital, and 68 have died—a case mortality rate of 19·3 per cent. If we analyse the figures still further, and consider those who were treated without operative interference, we find that in 215 cases of this kind 18, or 8·4 per cent. died, a mortality rate little higher than that for all cases of diphtheria. But where tracheotomy was necessary, the mortality was much higher, and of the 137 patients submitted to the operation, 50, or 36·5 per cent., died. (This includes 3 cases where intubation was performed, 2 of

which were fatal.) These figures compare quite favourably with the general English experience, but of recent years American investigators have attacked this problem, and by the introduction of new methods of treatment have reduced their operation mortality rate for this type of case from 40 per cent. to little more than 3 per cent. The method employed consists of introducing a fine tube through the mouth into the larynx, and by means of an electric exhaust pump, sucking out the membrane. The treatment may require to be repeated two or three times a day, but the results appear to have been eminently satisfactory. The procedure requires a certain amount of surgical dexterity, and the use of apparatus collected and adapted for the special purpose. It is hoped to make this form of treatment available at the City Hospital in due course.

SCARLET FEVER.

During the year 1929, 543 cases of Scarlet Fever were admitted to Walker Gate, as against 452 in 1928. This increased incidence was particularly marked in the last four months of the year, during which 359 cases were admitted.

The disease remained of the mild type, though the mortality recorded was slightly higher than for the previous year—0·74 per cent., instead of 0·4 per cent. The complication attack rate, on the other hand, was slightly lower—namely, 23·8 per cent., as contrasted with 24·3 per cent.

Scarlet fever antitoxin has been used throughout the year, but to a somewhat smaller extent. The numbers and relative proportions of patients receiving this form of treatment for the period 1926-1929 are as follows :—

	1926	1927	1928	1929
Scarlet Fever Cases admitted	831	741	452	543
Number treated with Antitoxin.....	78	172	177	169
Percentage treated with Antitoxin	9.5	20.3	39.2	31.1

In previous reports, attempts have been made to demonstrate statistically the benefits accruing from the use of Scarlet Fever antitoxin. Although the figures brought forward have suggested the efficacy of the remedy they have not proved it. Comparisons between various forms of treatment are always subject to the fallacy that in practice one cannot divide all the cases met with into two similar groups, and give the remedy to one and withhold it from the other. If the remedy is of any value at all, the impulse to give it to every serious case is irresistible, and under these circumstances no true comparison can be drawn. The two groups of such a suggested experiment can never be similar; the one which receives the remedy under trial always contains the severer cases, and the patients from whom the remedy is withheld, *i.e.*, the milder cases, find their way into the second group.

With these considerations in view, it has been thought advisable to modify the tables which were prepared in previous years for the definite purpose of comparing antitoxin and non-antitoxin cases. Certain of the data usually submitted have been discarded, and others given in their place. The total amount of statistical material is, however, no smaller. It is hoped

that in its new form the information may be equally serviceable, even though no attempt has been made to utilise it as a basis for statistical deductions.

It is sufficient to state that every practitioner who has had any experience of the use of scarlet fever anti-toxin testifies to its merits, despite the fact that statistical proof as to its efficacy is lacking. Not only is the administration of the serum to any severe case of scarlet fever almost invariably followed by a fall in temperature, amelioration of symptoms, and diminution of toxæmia, but it is now recognised that its remedial powers are not limited to that disease. Recent research has demonstrated the value of the antitoxin in the treatment of certain other diseases, notably puerperal fever and erysipelas.

SCARLET FEVER.	Num-ber.	Per-centage treated with Anti-toxin.	Per-centage with Compli-cations.	Mor-tality Rate.	Return Case Inci-dence.	Average stay in Days in Hospital.		
						All Cases.	Com-plicated Cases.	Non-compli-cated Cases.
All Cases ..	543	31.1	23.8	0.74%	5.3%	29.7	39.5	26.7
Antitoxin Cases ..	169	100	31.9	1.7%	2.9%	30.9	39.7	26.9
Non-Anti-toxin Cases	374	Nil.	20.1	0.27%	6.4%	29.1	39.3	26.7

PERCENTAGE INCIDENCE OF COMPLICATIONS.

	Rhin-orrhœa.	Ot-orrhœa.	Adenitis.	Rheu-matism.	Album-inuria.	Neph-ritis.	Cardiac.	Other Compli-cations.
All Cases	3.7	4.9	7.4	0.4	4.4	0.6	0.2	2.2
Antitoxin Cases	5.3	5.9	8.3	1.2	4.1	1.2	0.6	5.3
Non-Anti-toxin Cases	2.9	4.5	7.0	..	4.5	0.3	..	0.8

Otorrhœa and Rhinorrhœa.—The work of the Consulting Oto-Rhinologist to the Hospital, Mr. W. Frank Wilson, in the treatment and supervision of scarlet fever cases complicated by rhinorrhœa, or otorrhœa has been continued along lines developed in recent years.

The incidence of these complications has been much the lowest encountered since the introduction of special supervision of this type of case in 1921. 47 cases occurred in 543 admissions for scarlet fever—a complication rate of 8·6 per cent., as contrasted with 13·3 per cent. in the previous year.

The distribution of these cases according as to whether or not they were treated with scarlet fever antitoxin, and their respective average stay in hospital are shown in the following table :—

		Number of Cases.	Average stay in Hospital (days).
Non-Antitoxin Cases	Rhinorrhœa	11	33·6
	Otorrhœa	17	46·4
Antitoxin Cases	Rhinorrhœa	9	31·3
	Otorrhœa	10	57·5
Total.....		47	42·9

The average stay per patient of cases in this group was 42·9 days, as contrasted with the figure given for 1928, namely 39·9 days.

In the treatment of these patients it was found necessary to perform only one operation, a mastoidectomy, which was entirely successful.

Subsequent Progress.—As in previous years, supervision of all cases of rhinorrhœa and otorrhœa has been maintained after their discharge from hospital, and every

one of the 47 cases of this type has been visited at varying intervals. The results of these visits showed that amongst 20 cases of rhinorrhœa, 1, or 5 per cent., still had occasional slight nasal discharge, whilst 4, or 14·8 per cent., of the cases of otorrhœa had slight persisting deafness or discharge from the ear.

Included in the above patients visited was the one case upon which mastoidectomy had been performed. This patient had made a complete recovery without any after effects.

All the cases in which the nasal or aural discharge has persisted have been kept under observation by Mr. Wilson at the Out-patient Department of the Royal Victoria Infirmary.

“ Return ” Cases.—The following are details of the “ return ” cases of scarlet fever during the year :—

SCARLET FEVER.	“ Infecting ” Cases.		“ Return ” Cases.		“ Infecting ” Cases.
Total Admissions.	No.	Per- centage.	No.	Per- centage.	Average Day of Disease when Discharged.
543	31	5·7	29	5·3	31

SEASONAL OCCURRENCE.

QUARTER.	Total Scarlet Fever Admissions.	“ Infecting ” Cases.		“ Return ” Cases.	
		No.	Percentage	No.	Percentage.
January to March	59	2	3·4	2	3·4
April to June	74	3	4·0	2	2·7
July to September	123	3	2·4	3	2·4
October to December ..	287	23	8·0	22	7·7

Of the 31 “infecting” cases (a) 19 had no complications or discharges whilst in hospital, and remained “clean” after reaching home, (b) 5 had no complications whilst in hospital but developed discharges after reaching home, while (c) 7 had complications whilst in hospital, but were “clean” on discharge.

Of these classes, the average day of disease on discharge from hospital of the supposed infecting cases, and the period elapsing after that discharge and the onset of illness in the “return” cases, were as follows :—

Class (a)—31 and 12 days.

Class (b)—30 „ 12 „

Class (c)—32 „ 12 „

“RETURN” CASES FOR YEARS 1906–1929.

YEARS.	Total Scarlet Fever Admitted.	“Infecting” Cases.		“Return” Cases.	
		No.	Percentage.	No.	Percentage.
1906–10...	2,203	63	2·8	82	3·7
1911–15...	5,185	217	4·2	251	4·8
1916–20...	3,202	104	3·2	112	3·5
1921–25...	3,850	93	2·4	105	2·7
1926.....	831	31	3·7	33	3·9
1927.....	750	25	3·3	26	3·5
1928.....	452	7	1·5	6	1·3
1929.....	543	31	5·7	29	5·3

Hospital and Home “Isolation” Compared.

In order to determine the relative liability to further infection, subsequent to the first, in hospital and home-isolating households respectively, a careful record has been kept for seventeen years of the number of presumably susceptible persons in each invaded house, all, other than the original patient, below 12 years of age being so classed, and the proportionate incidence of secondary cases calculated.

Hospital and Home "Isolation" compared.

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YEAR	1913		1914		1915		1916		1917		1918		1919		1920		1921		1922		1923		1924		1925		1926.		1927.		1928.		1929.		17 YEARS.	
Patient "isolated" at.	Hospital.	Home.	Hospital.	Home.	Hospital.	Home.	Hospital.	Home.	Hospital.	Home.	Hospital.	Home.	Hospital.	Home.	Hospital.	Home.	Hospital.	Home.	Hospital.	Home.	Hospital.	Home.	Hospital.	Home.	Hospital.	Home.	Hospital.	Home.	Hospital.	Home.	Hospital.	Home.	Hospital.	Home.	Hospital.	Home.
Cases of Scarlet Fever treated	853	90	1404	311	1305	111	677	51	409	36	381	3	630	86	1105	184	1115	249	560	101	434	40	705	78	1036	179	831	134	750	100	410	40	470	31	13075	1824
"Susceptibles" in the homes of each class of patient	1131	53	1708	244	1462	86	800	8	509	17	450	20	726	47	1203	87	1401	147	647	50	563	16	807	32	1084	102	911	67	831	35	477	26	509	8	15219	1045
"Incidental" infections	69	3	78	28	85	7	33	2	25	..	18	..	59	1	69	5	88	16	37	5	31	2	34	3	74	10	32	3	41	5	20	1	31	..	824	91
Percentage of "incidentals" to "susceptibles"	6.1	5.7	4.6	11.5	5.8	8.1	4.1	25.0	5.0	..	4.0	..	8.1	2.1	5.7	5.7	6.3	10.9	5.7	10.0	5.5	12.5	4.2	9.4	6.8	9.8	3.5	4.5	4.9	14.3	4.2	3.8	6.1	..	5.4	8.7
"Return" Infections	29	..	84	..	55	2	21	1	20	..	14	..	22	..	49	3	30	7	7	1	17	1	29	..	23	..	34	1	26	..	6	..	29	1	495	17
Percentage of "returns" to "susceptibles"	2.6	..	4.9	..	3.8	2.3	2.6	12.5	3.9	..	3.1	..	3.0	..	4.1	3.4	2.1	4.8	1.0	2.0	3.0	6.2	3.6	..	2.1	..	3.7	1.5	3.1	..	1.3	..	5.7	12.5	3.2	1.6
Total of "incidental" and "return" infections	98	3	162	28	140	9	54	3	45	..	32	..	81	1	118	8	118	23	44	6	48	3	63	3	97	10	66	4	67	5	26	..	60	1	1310	108
Percentage of this total to "susceptibles" ..	8.7	5.7	9.5	11.5	9.6	10.5	6.7	37.5	8.8	..	7.1	..	11.2	2.1	9.8	9.2	8.4	15.6	6.8	12.0	8.5	18.7	7.8	9.4	8.9	9.8	7.2	6.0	8.1	14.3	5.4	3.8	11.8	12.5	8.6	10.3
Average number of rooms in the home per "susceptible"	2.1	6.9	2.2	4.1	1.9	4.8	2.0	18.5	2.1	5.2	2.2	6.2	2.5	4.8	2.2	7.5	2.1	6.0	2.1	6.9	2.1	9.9	2.3	8.8	2.3	5.8	2.3	7.6	2.3	10.5	2.7	6.7	2.8	16.6	2.1	6.2

For the purpose of this table a "return" case is counted to the year in which the "infecting" case was admitted, even though the latter may have been discharged, or the "return" case admitted, in the following year.

Cases occurring within seven days of the "isolation" of the original case are not counted, as these probably acquired their infection before the influence of the "isolation" could be felt. Cases occurring subsequently to the seventh day of "isolation" of the original case, and prior to the release of the latter, are classed as "incidental" infections. Cases occurring within 28 days after the release of the original case from "isolation" are classed as "return" infections.

The table on page 138A shows the results obtained.

ERYSIPELAS.

Of recent years erysipelas has shown a tendency to become one of the commoner and severer infectious diseases prevailing in the City. Its incidence and mortality approximate roughly to those of diphtheria, with the notable exception that while the latter is a disease of children and young people, erysipelas principally attacks the middle-aged and elderly.

In the following table the number of notifications of erysipelas, the deaths caused by the disease, and the case mortality rate are detailed for the years 1926-1929. In addition, similar information is given for such of these cases as were admitted to the City Hospital.

YEAR.	Total Notifica- tions.	Deaths.	Mortality Rate.	CITY HOSPITAL.		
				Admis- sions.	Deaths.	Mortality Rate.
1929 ..	220	11	5.0%	85	8	9.4%
1928 ..	234	19	8.1%	49	6	12.2%
1927 ..	212	12	5.7%	51	2	3.9%
1926 ..	172	5	2.9%	31	2	6.5%

The policy of admitting these patients to Walker Gate was extended during 1929, with a view to giving them the benefit of good nursing and the most recent advances in treatment. In practice it is the severer cases that are brought to hospital, and accordingly it is fallacious to contrast the results of these cases with those which are mild enough, or so conveniently situated that they can be left at home.

Erysipelas is due to an organism of the same family as the recently determined causal agent of scarlet fever—namely, the Hæmolytic Streptococcus. The antitoxin which has been discovered and used in the treatment of scarlet fever is also of considerable value in neutralising the toxæmia in erysipelas. By its use it is possible in a large number of cases to shorten the period of illness, and bring about an early and uneventful recovery. During the past year 58 of the 85 cases admitted to the City Hospital were so treated. Six, or 10·3 per cent., of the 58 died. Among the 27 non-antitoxin cases there were 2 deaths, a mortality rate of 7·4 per cent.

The difficulties encountered in demonstrating statistically the value of any antitoxin have already been touched on in the section on scarlet fever, and the same apply in the case of erysipelas. Nevertheless, the possession of such a valuable remedial agent as scarlet fever antitoxin has undoubtedly been of advantage to the practising physician, and so to the patient.

Mixed Infections.

15 patients sent into hospital, or 0·9 per cent., were found on admission to be suffering from two or more distinct infectious diseases, as follows :—

Scarlet Fever with Diphtheria	1
Scarlet Fever with Measles	3
Scarlet Fever with Pertussis	2
Scarlet Fever with Mumps	1
Scarlet Fever with Varicella.....	1
Diphtheria with Scarlet Fever	2
Diphtheria with Measles	1
Diphtheria with Dysentery	1
Measles with Pertussis.....	2
Pertussis with Varicella	1

Cross Infections.

During the year 12 patients, or 0·7 per cent. of the total admissions, contracted a second infection in the wards of the hospital.

The details are as follows, the primary infection being stated first :—

Scarlet Fever with Pertussis	3
Scarlet Fever with Varicella.....	1
Diphtheria with Scarlet Fever	2
Diphtheria with Dysentery	6

In the case of the cross infections with pertussis, varicella, and scarlet fever, these latter diseases were contracted from patients in the same ward, who, though suffering from scarlet fever or diphtheria on admission, were also simultaneously incubating pertussis, varicella, or scarlet fever. The cross infections with dysentery were traced to a patient who, while suffering from diphtheria, was also presumably a “dysentery carrier.” Shortly after her admission, 6 cases of acute dysentery arose in the same ward. From the stools of these patients, as also from those of the suspect, the Sonne dysentery organism was isolated.

It is gratifying to relate that all the “cross infected” patients made satisfactory recoveries.

Ultra-Violet Therapy.

The Ultra-Violet Lamp at the City Hospital has continued to be useful in the treatment of various diseases, though it has been employed to a smaller extent than in previous years. This is largely due to the absence of conditions, particularly tuberculous ones, requiring this form of treatment. The following is a summary of the cases treated :—

Hospital Staff.

(a) General Debility	2
(b) Skin Diseases	1

Patients in Hospital.

(a) Tuberculosis—Abdominal	2
(b) Debility following Scarlet Fever	5
Debility following Paratyphoid Fever	1
(c) Skin Diseases	1

The majority of these cases, especially those suffering from debility or skin conditions, were benefited by the treatment.

Bacteriological Laboratory, City Hospital.

The following examinations were made in connection with the patients in the fever wards :—

Swabs for Diphtheria Bacilli	1,166
Sputa for Tubercle Bacilli	427
Other Examinations	75
Total	<u>1,668</u>

Expenses of Maintenance.

Of the patients admitted, the expense of maintenance is charged as under :—

	CASES.
To the Newcastle Sanitary Authority	1,666
To private guarantors	15
Tyne Port Sanitary Authority	5
Other Local Authorities	27
TOTAL.....	<u>1,713</u>

Staff Sickness.

Nursing Staff.—56 of the Nursing Staff were off duty owing to sickness for a total of 1,004 days. 20 suffered from influenza, 12 from tonsillitis, and 8 from skin and septic conditions.

Domestic Staff.—44 were off duty through sickness for a total of 441 days. 14 suffered from influenza, 1 from tonsillitis, 2 from synovitis of the knee, and 10 from skin and septic conditions.

It will be noted that there were no cases of scarlet fever, diphtheria, or the enteric group of fevers amongst the nursing or domestic staff. This freedom from the major infectious diseases is due to the steady pursuit of inoculation and immunisation against these diseases which has been carried on during recent years. The great saving in health, time, and expense which has accrued from the adoption of these preventive measures will be sufficiently obvious without further comment.

SMALLPOX AND ISOLATION HOSPITALS, TOWN MOOR.

46 patients were admitted to the Smallpox Hospital during the year, 25 with the diagnosis of smallpox, and 21 suffering from scabies. All were temporary or permanent residents in the City.

In 4 of the 25 patients admitted as suffering from smallpox, the diagnosis was not confirmed. The diseases from which these 4 patients were suffering are recorded in the following table :—

Varicella	1
Iodide Rash	1
Vaccinia Rash.....	1
Dermatitis Artefacta	1

As a precaution, two of these patients were vaccinated after admission. In no case did any one of the four develop smallpox, either during or after their stay in hospital.

All the patients made a good recovery.

The following are details as to the age and vaccinal conditions of the cases of smallpox :—

	<i>Vaccinated.</i>	<i>Unvaccinated.</i>
0-15	—	1
15-25	—	8
25-35	—	3
35-45	—	1
45 and over	6	2
	—	—
	6	15
	—	—

The 6 vaccinated patients of 45 and over who contracted the disease had been vaccinated in infancy, but not since. This serves to indicate the value and importance of re-vaccination in adult life.

21 cases of scabies were admitted to the hospital, 13 of whom were natives from the African Village at the North East Coast Exhibition. In all these cases the disease was cured, and the patients were discharged, after disinfection of clothes, personal belongings, and bedding.

145 smallpox contacts were admitted to the Isolation Hospital, and were detained for varying periods during the disinfection of their homes.

DISINFECTION, Etc.

7,502 cases of notifiable infectious disease were inquired into by the Infectious Disease Inspectors and Health Visitors, and, with the exception of measles and chickenpox, the houses or rooms connected therewith

disinfected by spraying with formalin. In connection with cases of tuberculosis, 734 houses, including 781 rooms, were similarly disinfected. 677 visits were made, and disinfection was also carried out in 250 special cases.

120 extra visits of supervision to cases treated at home were made by the Infectious Disease Inspectors.

252 visits were made to cases who had suffered from otorrhœa and rhinorrhœa whilst in hospital.

Inquiries were also made in connection with 983 smallpox contacts. These persons were kept under observation until the possible incubation period was over.

INFECTED ARTICLES TREATED IN THE DISINFECTING APPARATUS AT THE
CITY HOSPITAL FOR INFECTIOUS DISEASES, WALKER GATE.

ARTICLES FROM CITY.		ARTICLES—HOSPITAL PROPERTY.	
1929	1928	1929	1928
19,761	20,042	17,996	13,954

4,133 articles of clothing, etc., were also disinfected at the Smallpox Hospital.

The staff have thus dealt with 41,890 articles at the two disinfectors during the year.

Fluid disinfectant, in half-pint tins, was given out free on the order of the special inspectors, for home use in connection with infectious disease. Every precaution was taken to ensure that the disinfectant was properly and economically used.

DISINFECTANTS DISTRIBUTED—1929.

FROM	FOR INFECTIOUS DISEASES.	FOR PHTHISIS.
	FLUID ($\frac{1}{2}$ pint tins.)	FLUID ($\frac{1}{2}$ pints.)
Health Department	190	....
Tuberculosis Dispensary .....	....	640
Corporation Yard, Benwell	31	....
TOTAL	221	640

BACTERIOLOGICAL INVESTIGATIONS, 1929.

The following is a report on the bacteriological examinations carried out on behalf of the Health Department of the Newcastle Corporation, at the Public Health Laboratory (University of Durham College of Medicine), Armstrong College.

A total of 6,967 specimens were submitted for examination. The nature of the investigations and the results obtained are given under the various sections as follows :—

BACTERIOLOGICAL EXAMINATIONS :—

	DIPHTHERIA.			PHTHISIS.			SWABS FOR HAEMOLYTIC STREPTOCOCCI.		
	Total.	Posi- tive.	Nega- tive.	Total.	Posi- tive.	Nega- tive.	Total.	Posi- tive.	Nega- tive.
No. of Ex- aminations	1634	172	1462	699	109	590	155	73	82
Percentage positive	..	10·5	..	..	15·6	..	..	47·1	..

AGGLUTINATION REACTIONS :—

	Agglutination Tests for the Enteric Fevers.			Agglutination Tests against Brucella Abortus and Brucella Melitensis.		
	Total.	Positive.	Negative.	Total.	Positive.	Negative.
No. of Examinations	93	*31	62	13	1	12

* Of these positive results:—

19 agglutinated *B. typhosus*.

2 „ *B. paratyphosus A.*

10 „ *B. paratyphosus B.*

MILK EXAMINATIONS :—

	Total.	Found.	Not Found.	Percentage positive.
1. For the tubercle bacilli				
by animal inoculation :—	377	33	344	8·75

2. Bacterial content of organisms other than the tubercle bacillus (the colon bacillus being taken as the indicator) :—

Colon bacilli not found in 1 cc. or less	7
Colon bacilli found in 1 cc., but not in less	44
Colon bacilli found in 0·1 cc., but not in less	50
Colon bacilli found in 0·01 cc., but not in less	32
Colon bacilli found in 0·001 cc., but not in less	19
Colon bacilli found in 0·0001 cc., but not in less....	18
Colon bacilli found in 0·00001 cc., but not in less..	20
	—
	190
	—

3. 184 samples of “ Graded Milk ” were examined during the year in accordance with the scheme of the

Ministry of Health under the Milk and Dairies (Amendment) Act, 1922, and Milk (Special Designations) Order, 1923. The following results were obtained :—

	Satisfied the Test.	Failed to satisfy the test.
“ Certified ” Milk	35	9
“ Grade A ” Milk (Tuber- culin tested).....	115	16
“ Grade A ” Milk	5	4
	<hr/> 155 <hr/>	<hr/> 29 <hr/>

4. The following special examinations were made on samples of milk at the request of the Medical Officer of Health :—

February	1	
March	4	
June	1	(Goats' Milk).
June	7	(For the N.E. Coast Exhibition purposes).

WATER EXAMINATIONS :—

Class I. (Colon bacilli not found in 100 cc. or less).....	101
Class II. (Colon bacilli found in 100 cc. but not in less)	48
Class III. (Colon bacilli found in 10 cc. but not in less)	17
Class IV. (Colon bacilli found in 1 cc. but not in less) ..	18
	<hr/> 184 <hr/>

During the month of July 22 samples of water were examined from the several Corporation Swimming Baths in the City, and the following is a summary of the results obtained :—

Class I. (colon bacilli not found in 100 cc. or less)	14
Class II. (colon bacilli found in 100 cc. but not in less)	2
Class III. (colon bacilli found in 10 cc. but not in less)	2
Class IV. (colon bacilli found in 1 cc. but not in less)	4
	—
	22
	—

Two samples of drinking water were also received for examination from the Lord Mayor's Holiday Camp at Warkworth during the month of July, and detailed reports were furnished at the time.

VENEREAL DISEASES :—

	Total.	Serological reactions.	Microscopical examinations.
From Treatment Centres	1,403	1,403	..
From Private Practitioners ...	1,430	1,264	166
TOTAL	2,833	2,667	166

OTHER EXAMINATIONS :—

(a) **Diphtheria.**—In addition to the daily examinations, virulence tests for suspected diphtheria bacilli from throats were carried out in 5 cases :—

1 case proved virulent.

2 cases proved non-virulent, and in

2 cases no diphtheria bacilli were isolated.

One throat swab was also examined for the organism of Vincent's angina, with a positive result.

(b) **Enteric Fevers.**—The following specimens of fæces were received and examined for organisms of the enteric group :—

From the City Infectious Diseases

Hospital 116 specimens

From the City Health Department 1 specimen

From this total of 117, 36 were positive and 81 were negative,

Typhoid bacilli being isolated 13 times

B. paratyphoid B. bacilli being isolated 23 „

Other organisms isolated were :—

B. Morgan, No. 1 9 „

Late Lactose Fermenting bacilli 14 „

B. pyocyaneus 6 „

B. paracolon 2 „

Three specimens of urine for enteric organisms were received from the City Infectious Diseases Hospital, all with negative result.

(c) **Bacillary Dysentery.**—Examination of fæces for dysentery bacilli from suspected cases has been continued throughout the year, and as previously done, one specimen was submitted after the patient was convalescent to determine freedom from infection before discharge from hospital.

The following results were obtained :—

	<i>From City Infectious Diseases Hospital.</i>	<i>From City Health Department.</i>	<i>Total Specimens.</i>
Total	357	57	414
Positive	138	25	163
Negative	219	32	251
<hr/>			
Flexner Bacilli	100	20	120
Sonne Bacilli	33	5	38
Newcastle Dys. Bacilli ..	6	..	6
	—	—	—
Total ..	139*	25	164*
	—	—	—

* A Flexner and a Sonne Bacillus were isolated together from one case.

Other organisms isolated were :—

B. Morgan No. 1	21
Late Lactose Fermenting bacilli	16
B. <i>fæcalis</i> <i>alkaligenes</i>	2
B. <i>paracolon</i>	5

As a result of the examination of specimens and the finding of dysentery bacilli in a large number of unrecognised cases, a special report of these cases, with clinical data and bacteriological results, was made by Dr. J. A. Charles and Dr. S. H. Warren, and published in "The Lancet," September 21st, 1929.

(*d*) **Food Poisoning.**—No specimens were submitted this year, except one sample of tomato paste from a doubtful case. This gave a negative result.

(*e*) **Post-Mortem Examinations :**—3 specimens were submitted from 3 cases for bacteriological examination.

2 were negative, and from

1 case *B. dysenteriae* Flexner W. was isolated.

(*f*) **B. Anthracis.**—Two suspected cases were examined, one being positive and the other one negative.

One suspected coat with fur trimming was also examined and found negative.

(*g*) **Miscellaneous.**—The following specimens were also received and reports furnished :—

12 specimens of cerebro-spinal fluid.

4 cultural examinations of blood.

2 specimens of sera for *B. dysenteriae* group,

1 specimen for agglutination to an organism isolated from the patient.

1 specimen of pus for examination.

1 blood film for malaria parasites.

1 specimen of *fæces* for *Amœbæ*.

The following table gives a complete summary of the various examinations, including the year 1928 for comparison :—

Nature of Investigation.	1928.	1929.
Throat Swabs for B. Diphtheria.....	1,386	1,634
Sputa for Tubercle Bacilli	706	699
Swabs for Hæmolytic Streptococci	—	155
Agglutination Tests :—		
Against Enteric Fevers	65	93
Against Brucella Abortus	—	13
Milk Examinations :—		
1. For Tubercle Bacilli.....	376	377
2. For Bacillus Coli	189	190
3. Graded Milk	200	184
4. Special Examinations	41	13
Water Examinations :—		
For Bacillus Coli	187	184
For Complete Examination	20	24
Shell Fish	8	—
Venereal Diseases	2,613	2,833
Other Examinations :—		
(a) Diphtheria Virulence Tests	8	5
(b) Enteric Fevers :		
Fæces	91	117
Urine	4	3
(c) Bacillary Dysentery	152	414
(d) Food Poisoning	17	1
(e) Post-mortem Specimens.....	17	3
(f) B. Anthracis	—	3
(g) Miscellaneous	23	22
Total	6,103	6,967

S. H. WARREN,

M.R.C.S. Eng., D.P.H. Lond.

Director, Public Health Laboratory.

University of Durham College of Medicine,

Newcastle upon Tyne,

29th May, 1930.

REPORT OF THE
TUBERCULOSIS MEDICAL OFFICER.

IV.—TUBERCULOSIS.

TUBERCULOSIS DISPENSARY.

TUBERCULOSIS.

Report of the Tuberculosis Medical Officer.

TO THE MEDICAL OFFICER OF HEALTH.

SIR,

I beg to submit, herewith, my report on the work of the Tuberculosis Section for the year 1929.

The number of new cases notified during the year was one less than in 1928, there being an increase in pulmonary forms of 43 and a decrease in non-pulmonary forms of 44.

There is a slight increase in the pulmonary death rate, the death rate for non-pulmonary tuberculosis is the lowest yet recorded in Newcastle-upon-Tyne.

On the 1st May, 1929, the new ward block at Walker Gate was opened. This accommodates 44 female patients, and has proved highly satisfactory. The grounds surrounding it are being laid out and in the short time their appearance has been greatly improved. The glass screens in the wards, which allow more patients to be accommodated in the same space, and which are an innovation in the hospital, have caused no trouble or difficulty.

As in previous years, a number of patients have been admitted to the Sanatorium Pavilions, City Hospital, Walker Gate, and transferred from there to Barrasford Sanatorium (16 cases), and 48 other cases were admitted to the Sanatorium Pavilions, City Hospital, Walker Gate, for observation and diagnosis.

The X-ray plant, which is now six years old, continues to give excellent service, and causes no trouble. It is, however, in some respects out-of-date, as constant improvements are always being made with this type of apparatus. 520 films were taken—a larger number than in any previous year. The work of the Department could be facilitated if an X-ray machine were installed in the Tuberculosis Dispensary, because then patients would not have to make an additional journey to the Hospital. This not only wastes time and causes delay, but, in the majority of cases, is definitely inconvenient to the patient. Furthermore, the waiting room facilities at the Hospital are inadequate. Under ideal conditions, every new case referred to the Dispensary on account of chest symptoms should be X-rayed as a routine part of their examination. At the present time this is not done—only a selected number, about 60 per cent., are X-rayed. The provision of an X-ray machine at the Tuberculosis Dispensary would, therefore, improve the standard of diagnosis, speed up the work of the Department, and prove a great convenience to patients. It is hoped that the Council will provide this X-ray apparatus at an early date.

In October, 1929, the Annual Conference of the National Association for the Prevention of Tuberculosis was held in the City in the Connaught Hall. Several members of the medical staff contributed papers and took part in the discussions, and the Conference was well attended and given ample publicity in the Press.

No action was necessary under the Public Health Act of 1925 (compulsory removal of patients to Hospital) nor under the Public Health (Prevention of Tuberculosis) Regulations, 1925, dealing with milk.

Attention is drawn to a special addition to the Annual Report dealing with Artificial Pneumothorax (pages 182-184). This report gives a summary of the cases done between the years 1922 and 1925, and is intended to show the late results of the treatment.

The Voluntary Tuberculosis Care Council continues its useful work of helping needy cases and providing clothing, beds and bedding when necessary.

I wish to acknowledge the assistance and support I have received from a loyal and interested staff.

Yours faithfully,

GEORGE HURRELL, M.D., D.P.H.,

Tuberculosis Medical Officer.

30th May, 1930.

REPORT.

Notifications.—852 notifications were received during the year but some were duplicates, so that the total number of new cases was 787, of whom 551 were certified to be suffering from “pulmonary” and 236 from “non-pulmonary” tuberculosis.

The details as regards sex and age are given in the accompanying table.

SUMMARY OF NOTIFICATIONS DURING THE PERIOD, 1ST JANUARY to 31ST DECEMBER, 1929.

AGE PERIODS.	Primary Notifications.													Total Notifications (including Cases previously notified by other doctors).	Number of Notifications on Form "B."				Number of Notifications on Form "C."				Number of Notifications on Form "D."						
	Primary Notifications.														Primary Notifications.				Institutions.		Sanatoria.		Institutions.		Sanatoria.				
	Primary Notifications.														Primary Notifications.				Institutions.		Sanatoria.		Institutions.		Sanatoria.				
	Primary Notifications.														Primary Notifications.				Institutions.		Sanatoria.		Institutions.		Sanatoria.				

Form "A."—Notification by any Medical Practitioner of a case of Tuberculosis (whether at an Institution or otherwise).

Form "B."—Notification by School Medical Officers of cases of Tuberculosis in children attending Public Elementary Schools of which he has become aware in the course of inspection.

Form "C."—Notification by the Medical Officers of Poor Law Institutions and Sanatoria of persons admitted who are suffering from Tuberculosis.

Form "D."—Notification by the Medical Officers of Poor Law Institutions and Sanatoria of persons discharged who are suffering from Tuberculosis.

"Primary Notifications" are all new cases coming to the knowledge of the Medical Officer of Health during the year, whether on Form "A" or from other sources.

As far as possible every notified case is visited by the nurses and urged to visit the Dispensary for examination and classification with a view to treatment.

Of the 787 cases notified, 511 attended the Dispensary and 151 others were visited in their homes by the Health Visitors in the course of the year. The names of the patients certified to have died from tuberculosis, but not previously notified, are entered in the notification register, so that if the 42 patients in this category, and 48 who died within one week of notification, be deducted, it will be seen that the Dispensary gets into touch with most of the known cases of tuberculosis.

With reference to the 35 cases neither examined at the Dispensary nor visited by the nurses, some were living in institutions, or common lodging houses, and others did not wish to be visited.

A table has been prepared to illustrate these points, and also to show the nature of the institutional treatment afforded to the cases notified during 1929. While 269 of the 551 patients notified as suffering from pulmonary tuberculosis were treated in beds belonging to, or controlled by the City Council, it is particularly noteworthy that only 14 out of a total of 236 patients notified as suffering from forms of tuberculosis other than pulmonary were treated in such beds.

The number of patients dying in the year of notification is also given, and it will be seen that 27·7 per cent. of all the new cases died in the same year as they were notified.

NOTIFICATIONS OF TUBERCULOSIS DURING 1929.

Part Affected.	Notifi- cations.	Attended Dispensary.	Visited by Nurse but not attended Dispensary.	Received Institutional Treatment.				Died during the Year.
				Barras- ford Sana- torium.	Sanat. Pav. Walker Gate.	Stann- ington Sana- torium.	Total.	
Pulmonary (Male) ..	313	224	45	62	80	5	147	91
„ (Female).	238	176	37	34	82	6	122	62
Non-Pulmonary— (Male)	114	58	29	..	..	6	6	27
(Female)	122	53	40	..	4	4	8	38
TOTALS	787	511	151	96	166	21	283	218

The cases re-admitted to the Sanatorium Pavilions, Walker Gate, and transferred to Barrasford Sanatorium during the year, are counted as only receiving treatment on one occasion.

During the year 198 cases (over 25 per cent. of the total) were notified by the Dispensary Medical Staff.

Non-notified deaths from pulmonary tuberculosis were 23, equal to 7·4 per cent. of deaths.

Non-notified deaths from non-pulmonary tuberculosis were 20, equal to 26·6 per cent. of deaths.

Practitioners were written to by the Medical Officer of Health when notification appeared to have been neglected.

PUBLIC HEALTH (TUBERCULOSIS) REGULATIONS, 1924.

NUMBER OF CASES OF TUBERCULOSIS REMAINING ON THE NOTIFICATION REGISTER
AT END OF YEAR.

Year.	PULMONARY.			NON-PULMONARY.			Total Cases.
	Males.	Females.	Total.	Males.	Females.	Total.	
1925.....	855	608	1,463	340	312	652	2,115
1926.....	744	515	1,259	297	263	560	1,819
1927.....	644	441	1,085	236	204	440	1,525
1928.....	720	443	1,163	294	254	548	1,711
1929.....	744	501	1,245	319	270	589	1,834

Deaths.—460 deaths were registered as due to some form of tuberculosis, and of these 327 were certified as due to pulmonary tuberculosis and 133 to other forms of the disease.

On these figures the death rates per 1,000 population were :—

	Number of Deaths.	Death Rate per 1,000 Population.
Pulmonary Tuberculosis	327	1·15
Non-Pulmonary Tuberculosis	133	0·47
	<hr/>	<hr/>
Total Tuberculosis Death Rate (uncorrected) ...	460	1·62
	<hr/>	<hr/>

It must be noted, however, that 20 residents of Newcastle died in other parts of the United Kingdom from tuberculosis (12 pulmonary ; 8 non-pulmonary), while 96 of the deaths (30 pulmonary ; 66 non-pulmonary) registered in Newcastle were those of temporary residents.

The corrected deaths and death rates per 1,000 of the population were :—

	Number of Deaths.	Death Rate per 1,000 Population.
Pulmonary Tuberculosis	309	1·09
Non-Pulmonary	75	0·26
	<hr/>	<hr/>
All forms of Tuberculosis (corrected)	384	1·35
	<hr/>	<hr/>

The details as regards sex and age, together with the form of the disease, are given in the accompanying table :—

DEATHS FROM TUBERCULOSIS.—Sex and Age Distribution.

	Under 1 year.		1 to 5		5 to 10		10 to 15		15 to 20		20 to 25		25 to 35		35 to 45		45 to 55		55 to 65		65 and upwards		TOTAL.	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
Respiratory System	1	..	3	..	4	1	1	7	15	26	22	18	34	31	42	17	40	14	22	9	2	..	186	123
Central Nervous System	1	2	3	8	8	..	1	2	4	3	1	..	..	1	..	..	..	1	..	..	..	..	18	17
Intestines and Peritoneum .....	..	1	..	3	..	1	..	1	1	1	..	..	1	..	..	1	1	..	..	..	..	..	3	8
Vertebral Column .....	..	..	..	1	..	..	..	..	..	..	..	..	..	1	2	..	..	1	..	..	..	..	2	3
Other Organs .....	..	..	..	..	..	..	..	..	..	..	..	1	..	2	2	..	..	..	..	..	..	..	2	3
Disseminated .....	..	..	..	1	..	1	1	..	2	5	1	..	1	2	2	..	1	..	..	1	..	1	8	11
Totals	2	3	6	13	12	3	3	10	22	35	24	19	36	37	48	18	42	16	22	10	2	1	219	165

81 per cent. of the "lung" cases were known to the dispensary staff, 216 having visited the dispensary and an additional 34 having been attended in their homes by the visiting nurses.

38·6 per cent. of the "non-pulmonary" were attended at or from the dispensary. The proportion is much too low; the main reason is that 26·6 per cent. of the non-pulmonary cases were not notified before death (see later).

Of 309 deaths from pulmonary tuberculosis the diagnosis was verified bacteriologically in 205 instances, *i.e.*, 66 per cent.

Duration of Illness.—Wherever possible, in pulmonary cases, enquiry was made as to the length of time the deceased had been ill, and the average duration of illness was found to be 43 months. As in previous years, important differences were discovered when age and sex were considered, the figures being 50·2 months for adult males, 34·2 months for adult females, and 12·8 months for those below 15 years of age (both sexes).

The period between notification and death was, as one would expect, longer in the adult males than in the adult females and children, but averaged 21·1 months for all cases.

As the duration of illness for all cases was 43 months, each patient who died during the year must, on the average, have been ill over 22 months before notification.

36·2 per cent. of the patients had either not been notified prior to death (7·4 per cent.), or died within 3 months of notification (28·8 per cent.).

Further details and comparative figures for previous years are submitted in the following table :—

RETURN OF DEATHS FROM PULMONARY TUBERCULOSIS OCCURRING IN :—

	Deaths which occurred in these years.							
	Average for 1913—17.	Average for 1918—22.	Average for 1923—27.	1928	1929.			
					M.	F.	C.	Total.
Persons not notified	43	51	33	21	12	8	3	23
„ notified under 1 mth.	35	47	50	43	23	11	6	40
„ between 1 and 3 „	94	48	44	58	26	22	1	49
„ between 3 and 6 „	53	30	38	30	18	19	2	39
Total under 6 months	226	183	166	152	79	60	12	151
Persons notified between								
6 and 12 months	47	46	40	28	19	12	1	32
„ 12 and 18 „ ..	28	21	25	23	9	5	1	15
„ 18 and 24 „ ..	15	15	17	23	14	6	3	23
„ 2 and 3 years ...	20	18	22	17	16	9	..	25
„ over 3 years ...	21	47	53	52	40	23	..	63
TOTALS	357	331	324	295	177	115	17	309

The figures for non-pulmonary forms of tuberculosis were even worse, for in 20 instances out of the 75 deaths, the disease had not been notified prior to death.

The records show that 13 of the 23 fatal unnotified cases of pulmonary tuberculosis, and 16 of the 20 fatal unnotified cases of non-pulmonary tuberculosis, died in hospitals ; included in the 16 “ other forms ” were 9 cases of tuberculous meningitis.

Occupation.—The nature of the work done and the conditions under which it is carried on have an important bearing on the incidence of disease, and probably account for the excess of adult male over adult female deaths from pulmonary tuberculosis.

145 “ insured persons ” (121 males and 24 females) are included in the 309 deaths.

Family History.—In 102 instances amongst the 261 cases of pulmonary tuberculosis known to the Dispensary who died during the year, *i.e.*, in 39 per cent., there was a history that some near relation was suffering from, or had died of pulmonary tuberculosis. The figures were 36 per cent. for males, and 42 per cent. for females.

House Accommodation.—The home conditions of the working classes are intimately associated with occupation and family history as predisposing to tuberculosis. The numbers of rooms in the dwellings occupied by the above 261 persons were as follows :—

Rooms in Dwelling.	1	2	3	4	More than 4	Common Lodging Houses.	Not Known.	Total.
Deaths	25	77	66	60	23	2	8	261

As regards the type of house occupied 125 were flats, 90 tenements, 36 self-contained, 2 were common lodging houses, and in 8 cases the particulars were not known.

Treatment in Institutions.—It is noteworthy that of the 224 patients suffering from pulmonary tuberculosis who attended the Dispensary and died in 1929, 195, or 87 per cent., had received institutional treatment on one or more occasions. This is a high percentage, and shows what a large proportion of the cases visiting the Dispensary avail themselves of the accommodation provided.

Ward Distribution.—As in previous years a table is presented to show the ward distribution of tuberculosis during 1929. The estimated population of each ward is given, together with the number of notifications and deaths, and the rates per thousand living.

Of course the figures for one year are relatively small, and the rates may show great fluctuation from year to year, but when an average is taken over a period it is apparent at once that the death rate and notified incidence are both much higher in the poorer and more congested wards of the City.

Considerations of space prevent the publication of all the figures, but while the tuberculosis death-rate for the City in 1929 was 1·35, the average for the ten years 1920-29 for All Saints' Ward was 2·12, and for St. John's 1·91, whereas the corresponding figures for St. Thomas' and Jesmond Wards were 0·85 and 0·79 respectively. When one ward shows, over a period of years, a death rate from tuberculosis almost three times as great as that of another ward of the same city, it is obvious that there is great scope for preventive measures in tackling tuberculosis, and that further careful consideration of the problem is warranted.

The following table shows the number of positive cases living in one, two, three, four, and more than four roomed houses, and also the total number of persons living under these conditions. It will be seen that the largest number of cases occur in two and three roomed houses. This point, in conjunction with the ward distribution of the disease, emphasises the necessity of improving the homes of the people in order to stamp out tuberculosis.

Housing Conditions of Sputum Positive Cases.

Holding.	Number of Cases.	Number of Persons.	Average number of persons to one Room.
1 Room	64	154	2·40
2 Rooms	153	691	2·26
3 Rooms	166	743	1·49
4 Rooms	166	820	1·23
More than 4 Rooms	89	485	1·09
TOTALS	638	2,893	1·46

In 18 instances there were 2 cases in one house. In 1 instance there were 3 cases in one house.

WARD DISTRIBUTION OF TUBERCULOSIS, 1929.

WARD.	Population 1929.	NOTIFICATIONS.						DEATHS.						New Patients Dispensary Registrar.								
		Pulmonary			Non- Pulmonary			TOTAL.			Pulmonary				Non- Pulmonary			TOTAL.				
		Attack rate per 1,000 of population.	Rate per 1,000 of population.	Attack rate per 1,000 of population.	Rate per 1,000 of population.	Attack rate per 1,000 of population.	Rate per 1,000 of population.	Attack rate per 1,000 of population.	Rate per 1,000 of population.	Attack rate per 1,000 of population.	Rate per 1,000 of population.	Attack rate per 1,000 of population.	Rate per 1,000 of population.		Attack rate per 1,000 of population.	Rate per 1,000 of population.	Attack rate per 1,000 of population.	Rate per 1,000 of population.				
St. Nicholas'	2,702	5	1.85	1	0.37	6	2.22	1	0.37	1	0.37	..	..	1	0.37	6	0.37	..	1	0.37	6	
St. Thomas'	13,654	17	1.24	6	0.44	23	1.68	6	0.44	10	0.73	..	..	10	0.73	21	0.73	..	10	0.73	21	
St. John's	15,082	34	2.25	15	1.00	49	3.25	15	1.00	16	1.06	7	0.46	23	1.52	80	1.52	7	0.46	23	1.52	80
Stephenson	18,414	40	2.17	16	0.87	56	3.04	16	0.87	26	1.41	7	0.38	33	1.79	84	1.79	7	0.38	33	1.79	84
Armstrong	15,349	27	1.76	11	0.71	38	2.47	11	0.71	16	1.04	2	0.13	18	1.17	82	1.17	2	0.13	18	1.17	82
Elswick	12,531	22	1.75	9	0.72	31	2.47	9	0.72	11	0.88	..	..	11	0.88	41	0.88	..	..	11	0.88	41
Westgate	15,002	29	1.93	13	0.87	42	2.80	13	0.87	20	1.33	5	0.33	25	1.66	56	1.66	5	0.33	25	1.66	56
Arthur's Hill	11,252	15	1.33	7	0.62	22	1.95	7	0.62	8	0.71	1	0.09	9	0.80	21	0.80	1	0.09	9	0.80	21
Benwell	18,225	35	1.92	15	0.82	50	2.74	15	0.82	20	1.10	5	0.27	25	1.37	91	1.37	5	0.27	25	1.37	91
Fenham	18,034	24	1.33	13	0.72	37	2.05	13	0.72	8	0.44	5	0.28	13	0.72	67	0.72	5	0.28	13	0.72	67
All Saints'	17,384	52	2.99	29	1.67	81	4.66	29	1.67	32	1.84	9	0.52	41	2.36	85	2.36	9	0.52	41	2.36	85
St. Andrew's	11,631	28	2.40	14	1.20	42	3.60	14	1.20	21	1.80	1	0.09	22	1.89	55	1.89	1	0.09	22	1.89	55
Jesmond	10,991	16	1.45	2	0.18	18	1.63	2	0.18	11	1.00	2	0.18	13	1.18	12	1.18	2	0.18	13	1.18	12
Dene	15,871	13	0.82	9	0.57	22	1.39	9	0.57	10	0.63	1	0.06	11	0.69	37	0.69	1	0.06	11	0.69	37
Heaton	15,230	23	1.51	7	0.46	30	1.97	7	0.46	7	0.46	1	0.06	8	0.52	47	0.52	1	0.06	8	0.52	47
Byker	17,182	35	2.04	16	0.93	51	2.97	16	0.93	18	1.05	4	0.23	22	1.28	102	1.28	4	0.23	22	1.28	102
St. Lawrence	17,607	43	2.44	14	0.80	57	3.24	14	0.80	31	1.76	8	0.45	39	2.21	86	2.21	8	0.45	39	2.21	86
St. Anthony's	15,500	37	2.39	13	0.83	50	3.22	13	0.83	21	1.35	5	0.32	26	1.67	84	1.67	5	0.32	26	1.67	84
Walker	21,759	56	2.58	26	1.19	82	3.77	26	1.19	22	1.01	12	0.55	34	1.56	118	1.56	12	0.55	34	1.56	118
City	283,400	551	1.94	236	0.83	787	2.78	236	0.83	309	1.09	75	0.26	384	1.35	1,175	1.35	75	0.26	384	1.35	1,175

NOTE.—Deaths occurring in Public Institutions have been allocated in every case to the Wards in which they resided.

The Tuberculosis Dispensary.

The number of cases who attended the Dispensary for the first time was 997. In addition, there were 178 cases who had been discontinued previous to the year 1929, who returned for examination, and are also counted as new cases in accordance with instructions in Memo. 37/T., making a total of 1,175.

555 of these were sent by general practitioners, 272 were referred to the Dispensary by the Visiting Nurses, 87 by the Newcastle-upon-Tyne Dispensary, 65 by the Royal Victoria Infirmary, 35 by the School Medical Officer, 45 by the Tuberculosis Medical Officer, 91 came of their own accord, and smaller numbers from other sources.

405 had been notified previously, and the balance, 770, of whom 198 were notified by the Dispensary Medical Staff, were suspects, or contacts of known cases. Of the last mentioned category 233 had lived with patients known to have bacilliferous sputum, and 75 were home contacts of persons certified to have died of pulmonary tuberculosis. The following table gives the details of the new cases, including contacts :—

NEW CASES EXAMINED, INCLUDING CONTACTS, DURING THE YEAR 1929.
(Table I., Sect. A. & B., Memo. 37/T.).

Diagnosis.	Males.		Females.		Totals.
	Over 15 yrs.	Under 15 yrs.	Over 15 yrs.	Under 15 yrs.	
Pulmonary Tuberculosis	163	10	144	13	330
Non-Pulmonary Tuberculosis .	16	25	14	27	82
*Diagnosis not completed after one month's observation ...	46	45	47	29	167
Non-Tuberculous	183	119	166	128	596
TOTALS	408	199	371	197	1175

* 46 of these were subsequently diagnosed as tuberculosis.

In respect of these new patients, after observation it was found that 61 per cent. were not suffering from active tuberculosis.

485 were "insured persons," and 583 were dependents of "insured persons," leaving only 107 of the uninsured classes.

Of the 178 cases who had been discontinued previous to the year 1929, and returned for examination, 30 were found to be suffering from tuberculosis. Details of these cases are given in the table which follows :—

CASES DISCONTINUED IN PREVIOUS YEARS, AND RETURNED DURING THE YEAR 1929. (INCLUDED IN PREVIOUS TABLE.)

Diagnosis.	Males.		Females.		Totals.
	Over 15 yrs.	Under 15 yrs.	Over 15 yrs.	Under 15 yrs.	
Pulmonary Tuberculosis	10	2	13	1	26
Non-Pulmonary Tuberculosis	..	..	1	3	4
Not Tuberculous	42	37	41	28	148
Totals	52	39	55	32	178

2,158 persons visited the dispensary during the course of the year, and registered 7,053 attendances, an average of over 3 per patient.

The total number of complete physical examinations made was 2,014, including 837 males, out of 2,944 attendances; 616 females, out of 2,005 attendances; and 561 children out of 2,104 attendances; giving an average of approximately 1 every 3 visits for adults, and every 4 for children.

In 33·0 per cent. of the cases attending the Dispensary, tubercle bacilli were found in the sputum; 47·6

per cent. of the males, 41·5 per cent. of the females, and only 4 per cent. of those under 15 years of age. The details are tabulated below :—

	Number of Patients and Cases who attended the Dispensary during the Year 1929.			
	Total.	Males.	Females.	Under 15 years of age.
“ Sputum Positive Cases ”	712	416	271	25
“ Negative Cases ”	1446	457	382	607
Totals	2158	873	653	632

Sputum Positive Patients.—The number of living sputum positive patients on the Dispensary Register on January 1st, 1929, was 626 ; during the year 119 of these died, and also 62 patients in whose sputa tubercle bacilli were found in the course of the year. In addition 64 patients were written off the Dispensary Register, (16 cured, 48 left the district.)

257 patients were added to the register, making a total at the end of the year of 638, consisting of 384 males, 233 females and 21 children. 556 of these patients visited the Dispensary during the year. Of the 82 who failed to attend 52 were reported by the nurses to be working or fit for work ; 20 were moderately well, while 8 had relapsed, and were mostly confined to bed ; in respect of the remaining 2 no information could be obtained. In 5 instances sanatorium treatment had been refused, but 66 patients had been treated at Barrasford Sanatorium, or the Sanatorium Pavilions, Walker Gate.

“ Negative Cases.”—The records of the patients in respect of whom no tubercle bacilli have been found in the sputum, together with non-pulmonary patients and suspects, are filed separately from those of the sputum

positive patients, and 1,446 cases in these categories attended during the year. This number included 457 adult males, 382 adult females, and 607 children. The preponderance of male cases was nothing like so pronounced as in the sputum positive group, and it is noteworthy that children were much more numerous, constituting 42 per cent. of the total, as opposed to 3.5 per cent. of the bacteriologically verified cases. The majority of these “negative cases” were “suspects” or “contacts.” 792 cases were removed from the Dispensary Register, and the details are given in the following table :—

CASES AND PATIENTS WRITTEN OFF THE DISPENSARY REGISTER
DURING THE YEAR 1929.

(Table I., Sect. C., Memo. 37/T.)

DIAGNOSIS.	MALES.		FEMALES.		TOTALS.
	Over 15 yrs.	Under 15 yrs.	Over 15 yrs.	Under 15 yrs.	
Pulmonary Tuberculosis, Cured	16	..	8	..	24
Non-Pulm. Tuberculosis, Cured	..	..	2	..	2
Non-Tuberculous.....	183	130	182	135	630
Left district, lost sight of, or will not attend Dispensary ..	78	11	63	8	160
TOTALS	277	141	255	143	816

The number of patients and cases on the Dispensary Register at the end of the year are tabulated below :—

NUMBER OF CASES AND PATIENTS ON DISPENSARY REGISTER
AT END OF YEAR 1929.

(Table I., Sect. D., Memo. 37/T.)

DIAGNOSIS.	MALES.		FEMALES.		TOTAL.
	Over 15 yrs.	Under 15 yrs.	Over 15 yrs.	Under 15 yrs.	
Pulmonary Tuberculosis (T.B. in Sputum)	384	7	233	14	638
Pulmonary Tuberculosis (no T.B. in Sputum)	148	25	94	17	284
Non-Pulmonary Tuberculosis.	88	118	81	89	376
Diagnosis Not Completed	68	81	71	77	297
Totals	688	231	479	197	1595

The two tables which follow are self-explanatory, and are required by the Ministry of Health under Memo. 37/T.

MEMO. 37/T. TABLE IV. PULMONARY TUBERCULOSIS.

ANNUAL RETURN SHOWING IN SUMMARY FORM THE CONDITION OF ALL PATIENTS WHOSE CASE RECORDS WERE IN POSSESSION OF THE DISPENSARY AT THE END OF 1929, ARRANGED ACCORDING TO THE YEARS IN WHICH THE PATIENTS FIRST CAME UNDER PUBLIC MEDICAL TREATMENT.

Condition at the time of the last Record made during the year to which the Return relates.	Previous to 1926.					1926.					1927.					1928.					1929.				
	Class T.B. plus.					Class T.B. plus.					Class T.B. plus.					Class T.B. plus.					Class T.B. plus.				
	T.B. plus.					T.B. plus.					T.B. plus.					T.B. plus.					T.B. plus.				
	Class T.B. minus.	Group 1.	Group 2.	Group 3.	Total (Class T.B. plus.)	Class T.B. minus.	Group 1.	Group 2.	Group 3.	Total (Class T.B. plus.)	Class T.B. minus.	Group 1.	Group 2.	Group 3.	Total (Class T.B. plus.)	Class T.B. minus.	Group 1.	Group 2.	Group 3.	Total (Class T.B. plus.)	Class T.B. minus.	Group 1.	Group 2.	Group 3.	Total (Class T.B. plus.)
Discharged as Cured— Adults—Male Female .. Children—Male Female .	33	..	..	..	63	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	19	..	..	..	29	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	5	..	..	..	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Disease Arrested— Adults—Male Female .. Children—Male Female .	22	9	5	2	16	3	..	..	..	..	5	..	..	..	..	6	..	..	..	..	..	..	..	..	..
	6	4	6	..	10	3	..	..	..	..	6	..	..	..	..	1	..	..	..	..	..	..	..	..	..
	5	..	..	..	..	2	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	9	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Disease not Arrested— Adults—Male Female .. Children—Male Female .	20	45	66	31	142	5	4	23	4	31	9	3	20	12	35	21	3	57	4	64	48	2	57	27	86
	12	15	41	10	66	4	..	12	4	16	13	1	8	4	13	7	3	24	6	33	30	5	54	26	85
	11	..	5	2	7	1	1	..	..	1	6	..	2	..	2	1	..	3	..	3	13	..	2	..	2
	7	3	8	2	13	3	..	..	..	..	1	..	..	1	1	3	..	1	1	2	7	..	7	1	8
Condition not ascertained during the year .....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	..	2	..	..	..	..	..
Lost sight of, or otherwise removed from Dispensary Register	11	..	..	..	113	12	3	13	3	19	21	1	9	7	17	11	1	3	1	5	4	..	1	3	4
DEAD—Adults—Male .. Female ..	22	..	..	..	197	8	2	38	37	77	12	2	25	42	69	5	..	25	31	56	8	..	8	26	34
Children—Male Female .	12	..	..	..	110	6	4	31	47	82	5	..	20	25	45	1	..	14	22	36	5	..	6	19	25
Male Female .	1	..	..	..	1	..	..	..	1	1	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..
TOTALS	196	76	131	47	773	51	14	118	103	235	79	7	84	95	186	50	7	132	66	205	118	7	136	104	247

ALIVE.

MEMO. 37/T. TABLE IV. (continued).
NON-PULMONARY TUBERCULOSIS.

ANNUAL RETURN SHOWING IN SUMMARY FORM THE CONDITION OF ALL PATIENTS WHOSE CASE RECORDS WERE IN POSSESSION OF THE DISPENSARY AT THE END OF 1929, ARRANGED ACCORDING TO THE YEARS IN WHICH THE PATIENTS FIRST CAME UNDER PUBLIC MEDICAL TREATMENT.

Condition at the time of the last Record made during the year to which the Return relates.	Previous to 1926.					1926.					1927.					1928.					1929.				
	Bones and Joints.	Abdominal.	Other Organs.	Peripheral Glands.	Total.	Bones and Joints.	Abdominal.	Other Organs.	Peripheral Glands.	Total.	Bones and Joints.	Abdominal.	Other Organs.	Peripheral Glands.	Total.	Bones and Joints.	Abdominal.	Other Organs.	Peripheral Glands.	Total.	Bones and Joints.	Abdominal.	Other Organs.	Peripheral Glands.	Total.
<i>Discharged as Cured—</i>																									
Adults—Male .....	..	..	..	..	16	..	1	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Female .....	..	..	..	..	14	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Children—Male .....	..	..	..	..	31	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Female .....	..	..	..	..	2	..	..	..	2	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
<i>Disease Arrested—</i>																									
Adults—Male	1	..	..	3	4	1	1	1	..	2	..	1	..	3	3	..	1	..	..	..	1	..	..	..	..
Female	2	1	..	1	4	..	..	..	4	4	1	..	..	3	4	..	1	..	..	..	1	..	..	..	..
Children—Male	2	..	1	6	9	3	1	..	1	5	2	1	..	3	6	..	..	..	..	..	..	..	..	..	..
Female	3	2	..	8	13	..	..	1	..	1	1	..	..	..	1	..	..	..	..	..	..	..	..	..	..
<i>Disease not Arrested—</i>																									
Adults—Male	3	..	5	3	11	4	..	..	1	5	2	2	..	3	5	6	6	3	6	15	6	1	..	6	13
Female	6	..	4	5	15	1	..	..	2	3	2	6	..	2	6	1	1	..	5	7	4	4	..	4	12
Children—Male	15	4	4	10	33	4	6	1	3	14	5	6	1	10	22	10	4	1	13	28	11	6	2	11	30
Female	7	3	4	13	27	8	..	..	4	12	5	3	..	6	14	6	1	1	10	18	11	10	1	6	28
Transferred to Pulmonary	..	..	..	1	1	..	..	..	1	1	..	1	..	2	3	..	1	..	..	1	..	..	..	..	..
Lost sight of, or otherwise removed from Dispensary Register	4	1	..	5	10	11	4	2	16	33	4	2	3	15	24	4	3	1	4	12	2	1	..	3	6
DEAD—Adults—Male .....	..	..	..	..	11	2	..	1	..	3	1	1	2	..	4	..	2	..	..	2	..	..	1	..	1
Female .....	..	..	..	..	7	..	1	..	..	1	..	1	1	..	2	..	1	..	..	3	..	2	1	..	3
Children—Male .....	..	..	..	..	2	1	..	1	..	2	..	1	..	..	1	1	2	..	..	3	..	..	..	..	..
Female .....	..	..	..	..	1	..	2	..	..	2	..	..	1	..	1	1	1	..	..	2	..	..	..	..	..
TOTALS	43	11	18	55	211	34	16	7	34	91	23	18	8	47	96	29	18	8	38	93	34	24	5	30	93

Relations with other Departments, etc.—The majority of new cases entered on the Dispensary Register were referred either directly by the local doctors (54·7 per cent.) or else by the visiting nurses after notification (23·1 per cent.). In many cases it was considered that more appropriate treatment or advice could be given elsewhere, and 328 letters of recommendation were given to other departments, hospitals, or charitable agencies. 139 cases were referred to the Voluntary Tuberculosis Care Council, 27 to the Citizens' Service Society, 17 to the United Services Fund, 28 to the Principal School Medical Officer, 30 to the Board of Guardians, 29 to the Royal Victoria Infirmary, 38 to the Housing Committee, and smaller numbers to various organisations.

Every effort is made to verify each notified case by bacteriological means, and during the year 1,250 specimens of sputum were examined at the Dispensary. Of this number 330 were found to contain tubercle bacilli, while 920 gave negative results. In addition 699 samples of sputum were sent, for examination, to the College of Medicine by the medical practitioners of the City. Of these 109 proved positive, and 590 negative.

Work of the Nurses.—1,085 new patients were seen, as against 1,060 in 1928, and 10,029 subsequent visits were made, giving a grand total of 11,114 for the year. The number of patients on the nurses' lists on December 31st, 1929, was 1,655, comprising 692 males, 486 females, and 477 children.

In 617 cases tubercle bacilli had been found in the sputum, and special attention has always been paid to these infective cases. They are visited at least once monthly, and their contacts are kept under the closest possible supervision.

During the year, the names of 1,155 patients were removed from the nurses' lists ; this total includes 299 deaths (180 sputum positive and 119 negative). Visits to 856 patients were discontinued on the instruction of the Tuberculosis Medical Officer ; of these only 46 were sputum positive cases, 24 of whom had left the district, while 810 were negatives. In 746 of the negative cases the names were removed because there was no evidence of active tuberculosis, while 64 had left the district.

The Work of the Sanitary Inspector.—This officer disinfects houses after deaths or changes of address of persons suffering from pulmonary tuberculosis, arranges for the removal and disinfection of patients' clothing and bedding, and reports on any insanitary conditions existing in the homes of dispensary patients, such as overcrowding, insufficient ventilation, or defective sanitary arrangements.

The details of his work were as follows :—

Houses visited	734
Houses disinfected (total)	673
For patients going to Sanatoria	120
For patients changing their address	72
For patients going to Hospital.....	325
After death	156
Rooms disinfected in above houses	781
Total number of visits	1325

The types of houses disinfected were as follows :—
one roomed, 57 ; two-roomed, 166 ; three-roomed, 179 ;
four-roomed, 151 ; more than four rooms, 120.

Houses found to have sanitary defects (including overcrowding) and re- ferred to the Senior Sanitary In- specter	66
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INSTITUTIONAL TREATMENT.

55 beds were provided at Barrasford Sanatorium for early or moderately advanced cases of pulmonary tuberculosis, but in September 72 beds were occupied by Newcastle patients ; 106 beds were available for more advanced or emergency cases at the Sanatorium Pavilions at the City Hospital, Walker Gate, while at Stannington Sanatorium (a private institution) 30 beds were maintained for the treatment of tuberculous children.

Barrasford Sanatorium.—The following particulars refer only to Newcastle patients. The report of the Medical Superintendent of Barrasford Sanatorium will be found under a separate heading, and contains the complete statistics for that Institution.

120 patients (81 men and 39 women) were admitted in the course of the year, and were classified at the Dispensary in the following categories, in accordance with the classification in Memo. 37/T.: G.1 +, 1 ; G.2 +, 76 ; G.3 +, 11 ; T.B. Minus, 28. (In the latter category 13 were pleurisy with effusion, and 4 were sent for the purpose of observation.)

Details of the admissions and discharges are given in the following table. The total number of days, and average length of stay is given in the table on page 179 :—

PATIENTS WHO RECEIVED TREATMENT IN BARRASFORD SANATORIUM
DURING THE YEAR 1929.

(Table II. B., Memo. 37/T.)

	Sex.	In Barrasford Sanat'm on 1st January, 1929.	Admitted during the Year.	Dis- charged during the Year.	In Barrasford Sanat'm on 31st December, 1929.
Patients	M.	33	78	72	39
Do.	F.	22	38	39	21
Observation Cases	M.	..	3	3	..
Do.	F.	..	1	1	..
TOTALS.....		55	120	115	60

One patient was admitted twice and is counted as two admissions.

Of the 4 patients who had been under observation, 1 was found to be suffering from tuberculosis.

The results of treatment in the institution were satisfactory, and the condition of the patients on discharge was as follows :—

RESULTS.	Males.	Females.	TOTAL.
Fit to Work.....	44	24	68
Improved	10	5	15
Without Improvement	21	11	32
TOTALS	75	40	115

Discharged patients are visited at frequent intervals by the Dispensary staff and are encouraged to report periodically so that they can be examined and records kept.

In the next table a summary is given of the condition on December 31st, 1929, of all the patients treated at the Corporation expense during the last five years :—

PATIENTS WHO RECEIVED TREATMENT IN BARRASFORD SANATORIUM
AND THE RESULTS.

YEAR.	Number of Patients discharged from Barrasford Sanatorium.	MALES.	FEMALES.	Condition at end of Year 1929.					Total Number of days in the Sanatorium.	Average number of days in the Sanatorium.
				Well, working or fit to work.	Improved or moderately well.	Relapsed.	Dead.	Lost sight of, or left the district.		
1925	109	70	39	39	8	7	45	10	15,716	144
1926	143	104	39	58	12	5	58	10	19,518	136
1927	114	79	35	44	13	9	38	10	15,147	133
1928	110	85	25	64	13	5	19	9	14,088	128
1929	115	75	40	75	22	9	9	..	19,659	171
TOTALS ..	591	413	178	280	68	35	169	39	84,128	142
Received treatment in previous years ..	87	68	19	30	14	9	31	3	..	..
Nett Cases	504	345	159	250	54	26	138	36	84,128	167

Sputum Positive Patients.—The appearance of tubercle bacilli in the sputum indicates that there is active destruction of lung tissue, but it must be recognised that there is always a doubt about any case in which the diagnosis has not been verified bacteriologically. Accordingly the bacterial history of each patient admitted to Barrasford Sanatorium has been investigated as thoroughly as possible, and the results are tabulated as follows :—

BACTERIAL HISTORY OF
PATIENTS WHO RECEIVED TREATMENT IN BARRASFORD SANATORIUM.

YEAR.	Persons discharged from Barrasford Sanatorium.				Persons deceased at the end of the year.				Cases who had Tubercle Bacilli in the Sputum and could not be traced at end of Year.
	TOTAL Nett Cases.	Number who had Tubercle Bacilli found in the Sputum.	Number who had <i>not</i> Tubercle Bacilli found in the Sputum.	Number who had Tubercle Bacilli found in the Sputum after discharge.	TOTAL.	Tubercle Bacilli found in the Sputum before or during treatment.	Tubercle Bacilli found in the Sputum after discharge.	No record of Tubercle Bacilli ever found in Sputum.	
1925	89	71	18	2	36	33	1	2	8
1926	124	104	20	1	50	43	..	7	9
1927	98	71	27	..	30	28	..	2	7
1928	94	59	35	..	15	11	..	4	5
1929	99	76	23	..	7	7	..	..	..
TOTALS	504	381	123	3	138	122	1	15	29

The very heavy mortality experienced by the bacteriologically verified cases shows how serious is the finding of tubercle bacilli in the sputa of patients of the industrial classes.

STANNINGTON SANATORIUM.

The 30 beds were kept fully occupied throughout the year, and 43 patients completed treatment.

The details appear below :—

CHILDREN WHO RECEIVED TREATMENT IN STANNINGTON SANATORIUM
DURING YEAR 1929.

	In Sanatorium on 1st Jan., 1929.	Admitted during the Year.	Persons who completed Treatment during the year.			In Sanatorium on 31st Dec. 1929.
			Number	Total Number of Days	Average length of stay in Days.	
Males	13	26	25	4,394	176	14
Females	17	17	18	4,982	277	16
TOTALS.....	30	43	43	9,376	218	30

In nearly every case great benefit accrued to the patient, as is shown in the following return :—

	Males.	Females.	Total.
Disease quiescent	14	12	26
Improved	10	6	16
Without Improvement	1	..	1
TOTALS	25	18	43

SANATORIUM PAVILIONS, WALKER GATE.

On May 2nd a new pavilion, containing 44 beds for females was opened, bringing the number of beds at the Sanatorium Pavilions to 106. These have been generally kept fully occupied, and at times there were patients awaiting admission.

303 patients were admitted (162 males and 141 females).

Details of the number of patients admitted and discharged are given in the accompanying table :—

PATIENTS WHO RECEIVED TREATMENT IN THE SANATORIUM PAVILIONS,
WALKER GATE, DURING THE YEAR 1929.

(Table II. B., Memo. 37/T.)

		Sex.	In Institu- tion on 1st January 1929.	Ad- mitted during the Year.	Dis- charged during the Year.	Died in Institu- tion during the Year.	In Institu- tion on 31st Dec., 1929.
Number of Patients.	Adults ..	M.	46	134	87	48	45
	Do.	F.	26	109	67	31	37
	Children .	M.	2	2	2	..	2
	Do.	F.	4	10	9	4	1
Observation Cases.	Adults ..	M.	4	15	15	1	3
	Do.	F.	..	16	11	1	4
	Children .	M.	..	11	10	..	1
	Do.	F.	..	6	5	..	1
TOTALS...	..	..	82	303	206	85	94

N.B.—4 patients were re-admitted and are counted as 8 admissions.

1 patient was re-admitted twice, and so counted as 3 admissions.

Of the 43 patients who had been under observation 12 were found to be suffering from tuberculosis. The total number of days of those who received treatment was 34,305, giving an average length of stay of 118 days.

85 patients died in the institution; the condition of the other patients on discharge is given in the table below :—

	Males.	Females.	Total.
Improved	91	62	153
Without Improvement	23	30	53
Died in Hospital	49	36	85
TOTALS.....	163	128	291

Many of those discharged “ improved ” were fit for light work, while 16 were transferred to Barrasford Sanatorium.

Treatment has been on Sanatorium lines, modified to some extent in view of the type of patient; the essentials are the same, however, namely, rest and good food under satisfactory hygienic conditions, with exercise graduated to the patient's tolerance.

Artificial Pneumothorax.—There were 18 initial inductions of artificial pneumothorax and 236 refills performed at Walker Gate Sanatorium during the year. Since the year 1922, 172 patients have received this form of treatment at Walker Gate Sanatorium, and 111 at Barrasford Sanatorium.

Late Results of Artificial Pneumo-Thorax Treatment.

The following brief statement deals with 127 cases of artificial pneumo-thorax, which were attempted between 1922 and 1925. The operation was successful in 84 cases (42 males and 42 females) and unsuccessful

in 43 cases (26 males and 17 females.) The classification of these, according to the categories given in Memo. 37T., were :—

Group G1 +	7 males.	2 females.
Group G2 +	32 „	33 „
Group G3 +	29 „	24 „

It will be noticed that all cases had tubercle bacilli in their sputum, and that a greater proportion were in Groups 2 and 3. No case developed serious complication at any time ; approximately 60 per cent. had fluid in the artificial pneumo-thorax at some period of the treatment.

The following table shows the age groups of the patients :—

Age Periods (Years).	MALES.		FEMALES.		Totals.
	Successful.	Not Successful.	Successful.	Not Successful.	
5—10.....	..	1	1	1	3
10—15.....	..	..	..	1	1
15—20.....	10	5	11	3	29
20—25.....	15	11	11	3	40
25—30.....	6	2	6	2	16
30—35.....	5	2	1	1	9
35—40.....	2	2	7	2	13
40—45.....	3	2	4	2	11
45—50.....	1	1	..	1	3
50—55.....	..	..	1	1	2
Totals	42	26	42	17	127

The condition of these patients on the 31st December, 1929, is set out in the following table :—

Condition on 31st Dec., 1929.	MALES.		FEMALES.		Totals.
	Successful.	Not Successful.	Successful.	Not Successful.	
Well or Working ..	7	..	8	1	16
Moderately Well.....	..	..	3	1	4
Relapsed ...	2	2	..	..	4
Not Known .	1	..	2	2	5
Dead	32	24	29	13	98
Totals ...	42	26	42	17	127

It will be seen that 77 per cent. are dead. For the purpose of comparison, the condition of the patients discharged from the Sanatorium Pavilions, Walker Gate, during the same period, who had tubercle bacilli in their sputum, but who did not receive artificial pneumo-thorax treatment is set out below :—

Condition on 31st Dec., 1929.	Not received A.P.T.	Per centage.	Success- ful A.P.T. Cases.	Per- centage.	Not success- ful A.P.T. Cases.	Per- centage.
Well or work- ing.....	31	4·3	15	17·8	1	2·3
Moderately Well	23	3·2	3	3·6	1	2·3
Relapsed	12	1·7	2	2·4	2	4·6
Not known...	29	4·0	3	3·6	2	4·6
Dead	623	86·8	61	72·6	37	86·2
Totals	718	100·0	84	100·0	43	100·0

The number of cases treated was small, but of those who received successful treatment 17·8 per cent. are well, and working, as against 4·3 per cent. who did not receive treatment, and 2·3 per cent. where treatment was unsuccessful.

No strict comparison can be made between the patients who had and who had not artificial pneumo-thorax treatment, because the extent and severity of the disease varies in each case. The fact remains, however, that artificial pneumo-thorax is one of the most hopeful forms of treatment, if used in suitable cases. It produces almost immediate diminution of cough and expectoration, very often causes the temperature to settle, and, where the patient is living with a family, it lessens the possibility of infection. Artificial pneumo-thorax continues to be done on as many cases as possible.

X-Ray Examinations.—During the year the following thoracic examinations were carried out, viz., 520 films and 328 screen examinations. In addition, many patients are screened as a routine, especially during artificial pneumo-thorax treatment, of which no special record has been kept.

Other Institutions.—Numerous cases of surgical tuberculosis were treated in the general hospitals, *e.g.*, the Royal Victoria Infirmary and the Fleming Memorial Hospital. In addition, 165 patients admitted to the Wingrove Hospital were notified as suffering from tuberculosis; 107 of these (74 males and 33 females) being lung cases and 58 (23 males and 35 females) suffering from non-pulmonary tuberculosis.

Deaths in Institutions.—209 of the deaths from tuberculosis (161 “lungs” and 48 “other forms”) occurred in institutions. 87 patients (83 “lungs” and 4 “other forms”) died in the Sanatorium Pavilions, Walker Gate, and the City Hospital for Infectious Diseases. 81 patients (64 “lungs” and 17 “other forms”) in Wingrove Hospital, 21 patients (5 “lungs” and 16 “other forms”) in the Royal Victoria Infirmary, 3 patients (1 “lungs,” 2 “other forms”) in the Fleming Memorial Hospital, and 17 patients in other institutions.

The various activities of the Tuberculosis Section have been summarised, and are set out on page 186, together with the corresponding figures for previous years.

Annual Return to the Ministry of Health, under Memo 37/T.

188A

TABLE I.

[illegible]

TUBERCULOSIS SECTION.

SUMMARY.

	Average for 5 years.			1928.	1929.
	1913-17	1918-22	1923-27.		
<i>Notifications . . . Total.</i>	1013	786	828	788	787
Pulmonary	661	538	543	508	551
Non-Pulmonary	352	248	285	280	236
Notified by Disp. Med. Staff	174	184	151	145	198
<i>Deaths (Corrected) Total.</i>	536	469	419	372	384
Pulmonary	382	354	325	295	309
Non-Pulmonary	154	115	94	77	75
<i>Attendances at Dispensary</i>	6777	10588	8283	7209	7053
New Patients	899	919	954	934	997
Discontinued cases returned . . . . .	..	..	..	..	178
<i>Barrasford Sanatorium</i>					
Admitted	74	105	112	127	120
Discharged	74	103	112	110	115
<i>Stannington Sanatorium.</i>					
Admitted	58	44	43	46	43
Discharged	52	44	43	46	43
<i>Sanatorium Pavilions, Walker Gate.</i>					
Admitted	92	187	281	267	303
Discharged	62	134	207	198	206
Died	23	48	67	72	85
<i>Bacteriological Exams.</i>					
College of Med.. Total.	690	604	619	706	699
Sputum—Positive ..	177	138	110	114	109
Negative .	513	466	509	592	590
<i>Dispensary . . . Total.</i>	678	1546	1357	1191	1250
Sputum—Positive .	151	343	295	289	330
Negative .	527	1203	1062	902	920
Urine Examinations .	586	921	947	960	996
<i>Work of Nurses.</i>					
New Patients	800	632	1035	1060	1085
Subsequent Visits . . .	5362	11295	11188	9978	10029
Total Visits ..	6162	11927	12223	11038	11114
<i>Special Inspector's Visits</i>	1560	1016	1331	1325	1325
Houses Disinfected ..	533	513	706	629	673
Rooms Disinfected ..	853	578	806	698	781
Sanitary Defects—Houses	38	68	148	117	66

GEORGE HURRELL, M.D., D.P.H.,
Tuberculosis Medical Officer.

BARRASFORD SANATORIUM.

Report of the Medical Superintendent.

TO THE MEDICAL OFFICER OF HEALTH.

SIR,

Herewith is submitted a report on the work at Barrasford Sanatorium during the year 1929.

One of the most important and encouraging features of the year's work is that, although the number of admissions and discharges are considerably fewer than in any year since the Corporation acquired the Institution, yet the number of patient days is higher than ever before. The figure for patient days stands at 30,933, and indicates that the percentage of beds occupied to beds provided during the year is over 94. The average period of residence of all the cases discharged during 1929 was 158·5 days, or over $22\frac{1}{2}$ weeks per patient, and it must be remembered that this includes all cases discharged within a comparatively short time of admission, for various causes, such as proving to be non-tuberculous, or being too ill to justify being kept. The fact that patients are staying longer is most encouraging, and would seem to speak well for their comfort.

The opening of the handicrafts shop in August, 1929, signalled a great advance in the facilities for occupying to advantage the time of patients. A large, suitable building was made available, central heating was installed, and one part was equipped for handicrafts and another for woodwork. The building was previously occupied by the chauffeur, and to provide alternative accommodation for him, and to give housing to the whole time handicrafts instructor, two semi-

detached residences, each of 5 rooms, were built in the row containing the cottages of the other employees. This addition to occupational therapy has been a very great success from the commencement, and is most popular. The principle is therapeutic and not vocational. It is intended to give the patients an opportunity of learning practical handicrafts at a time when, having improved in general health by routine treatment, and when the walks in the four different directions have been fully explored, monotony sets in, and supervised instruction in interesting handicrafts provides an entirely new sphere of activities and thought.

In handicrafts, instruction is given in many directions. Raffia is much used in the making of tea cosies, baskets, etc., whilst others prefer basket making or leather work. Seagrass weaving is popular, and there is scope for the development of small hand loom work, bookbinding, rug making, etc.

There is considerable activity in the woodwork section, under the control of the joiner. At present corner cupboards are being made for patients' rooms, and in time every patient will have his own cupboard. Another feature is the making of small stools, which are completed by having seats of woven seagrass fitted in the handicrafts department. The standard of work throughout seems to be excellent, and the sale of articles on completion is usually effected easily. In the circumstances, the wastage in material is very little.

It is hoped to extend the scheme in 1930 by acquiring a separate workshop for the woodwork section, and thus making the whole of the handicrafts shop available for handicrafts. From September 1st to December 31st, the total number of hours worked by patients under the handicrafts instructor was 4,600—divided almost equally between male and female (2,316 and 2,284).

A further benefit of importance has been the provision of a new recreation room for the women patients. This was made possible by the permission of the Charity Commissioners to utilise a portion of a legacy left by the late William Watson, Esq., of Newcastle upon Tyne. A fine room, measuring 30 feet by 20 feet, and built of brick and corrugated iron, lined with composition, has been attached to the wing for female patients. It is heated by an open fire, with hot water radiators heated therefrom, and is comfortably furnished. Previously it had been necessary for the male and female patients to share the recreation room by using it at different times, with the result that the men patients were kept from the billiard tables whilst the female patients were using the room, but not the tables. With the additional room, both parties are able now to spend the full period for recreation in their respective recreation room, and the extra accommodation is a very great asset to the patients' comfort.

As in previous years, the withdrawal of the water supply from the Newcastle & Gateshead Water Company's supply pipe, for the necessary purpose of cleaning the water main, caused shortage and consequent anxiety in the Institution during the period of the work, early in the year. This was owing to the fact that the supply from the Sanatorium's own boring is now insufficient for the needs of the community. The importance of this aspect of the water supply has been recognised by the Corporation for several years, and with the failure of the private supply becoming worse each year, it has been decided to sink a new bore hole to endeavour to improve the local supply, and the result of the boring is awaited with great interest.

The X-ray plant has continued to give admirable service. Since it was installed, however, the advantages of taking radiographs of the chest at a distance of 4 to 6 metres between the tube and the chest have been proved; but it seems to be impossible to achieve this where the primary voltage is as low as 110 volts, as at Barrasford—at any rate, without additional expense. Radiographs are taken of each patient's chest on admission, and the interpretations are typed on cards and filed, and also entered in the patient's clinical record. 200 films were completed during the year. A very large number of screenings—that is viewing of the lungs without the taking of a film—has been carried out in connection with the artificial pneumo-thorax work.

Since the date of the last yearly report, the housing conditions of the nursing and domestic staffs have been investigated by the Health Committee, and as a result, it was decided to endeavour to build a Nurses' Home for the female staff, an attempt being made, in the first place, to obtain the financial aid of the Unemployment Grants Committee.

Regular gifts of books for the patients have been forthcoming as in previous years, from the British Red Cross Society, Dr. Harold Kerr, and numerous other donors, to all of whom grateful thanks are due.

Admissions.

As previously stated, the number of cases admitted during 1929 was smaller than ever since 1921, when the Corporation took over the Institution, being 24 less than in 1928. The diminution in the number of admissions is largely due to the fact that the Gateshead cases, occupying the (fixed number of) 10 beds which that Local Authority maintains, stayed longer—only 24 cases being

admitted instead of 42 in 1928, and 35 and 38 in 1927 and 1926 respectively, though the 10 beds were fully occupied throughout the year. The increased length of stay of the Gateshead patients is one of the good features of the year's work.

The number of Newcastle admissions, though reduced, is not down to any extent, there being 120 cases against 127 in 1928, and 117 and 113 in 1927 and 1926 respectively.

Of the 178 admitted cases, 18 had been in the Sanatorium previously, and were disposed as follows :—

Newcastle Corporation	13 out of 120
Gateshead Corporation	3 out of 24
Tynemouth Corporation	1 out of 8
West Hartlepool Corpora- tion	1 out of 15

1 of the re-admitted cases was first admitted in 1918

2 of the re-admitted cases were first admitted in 1925

3 „ „ „ 1926

7	„	„	„	1927
---	---	---	---	------

4 „ „ „ 1928

1 of the re-admitted cases was admitted twice in 1929

All the 18 patients had tubercle bacilli present in the sputum.

ADMISSIONS TO THE SANATORIUM DURING 1929.

Authority.	Male.	Female.	Total.
*Newcastle Corporation	81	39	120
Gateshead Corporation	24	..	24
Tynemouth Corporation	4	4	8
West Hartlepool Corporation	6	9	15
Tynemouth Union	1	..	1
Private Cases	4	2	6
Post Office Sanatorium Society	4	..	4
	124	54	178
During 1928	147	55	202
During 1927	151	65	216
During 1926	166	62	228
During 1925	182	59	241
During 1924	150	51	201
During 1923	155	52	207
During 1922	212	55	267
During 1921	220	60	280

* Includes 1 case admitted twice and counted as 2 admissions.

Discharges.

18 fewer cases were discharged in 1929 than in 1928, the total for the year under review being 169. No case died in the Sanatorium during the year. 8 patients were discharged shortly after admission, as they seemed to be too ill to give any reasonable hope of their health improving.

There were 3 summary dismissals for ill-behaviour during the year, making a total of only 5 since 1921.

DISCHARGES FROM THE SANATORIUM DURING 1929.

Authority.	Male.	Female.	Total.
Newcastle Corporation	75	40	115
Gateshead Corporation	24	..	24
Tynemouth Corporation	4	4	8
West Hartlepool Corporation	4	10	14
Tynemouth Union	2	..	2
Private Cases	3	..	3
Post Office Sanatorium Society	3	..	3
	115	54	169
During 1928	142	45	187
During 1927	151	71	222
During 1926	172	61	233
During 1925	171	57	228
During 1924	152	46	198
During 1923	167	52	219
During 1922	229	65	294
During 1921	212	62	274

SUMMARY OF MOVEMENTS OF PATIENTS DURING 1929.

Authority.	In residence night of Dec. 31st, 1928.	Admitted during 1929.	Discharged during 1929.	In residence night of Dec. 31st, 1929.
Newcastle Corporation	55	120	115	60
Gateshead Corporation	10	24	24	10
Tynemouth Corporation	2	8	8	2
West Hartlepool Corporation.....	5	15	14	6
Tynemouth Union	1	1	2	..
Private Cases .....	..	6	3	3
Post Office Sanatorium Society....	1	4	3	2
	74	178	169	83

The particulars of patients and the results of their treatment, which are set out later, are based on the discharged, *i.e.*, completed cases. Of the 169 discharged cases, 12 exhibited no definite signs or symptoms of clinical tuberculosis, and were discharged as not suffering from that disease, and are excluded from the par-

ticulars and results of treatment which follow later. This leaves 157 cases of definite pulmonary or pleural tuberculosis, some details of which are now set out :—

SOCIAL STATUS.

	Male.	Female.	Total.
Single	56	29	85
Married	50	17	67
Widowers	1	..	1
Widows .....	..	4	4
TOTAL	107	50	157

AGE.

Years.	Male.	Female.	Total.
16—20.....	8	7	15
20—25.....	27	10	37
25—30.....	26	19	45
30—35.....	20	7	27
35—40.....	7	3	10
40—45.....	6	1	7
45—50.....	7	2	9
50—55.....	5	..	5
55—60.....	1	1	2
	107	50	157

OCCUPATIONS OF 107 MALE PATIENTS :—

Engineering and Metal Workers.....	17
Labourers	15
Miners	8
Clerks	6
Woodworkers.....	6
Warehousemen	4
Machine Men	3
Plate Layers	3
Motor Drivers	3
Moulders	2
Students	2
Railway Workers—Outside.....	2
Railway Workers—Inside	1

Postmen	2
Van Men.....	2
Dock Labourers	2

and one each of the following :—funeral furnisher, tin-smith, french polisher, motorman (tramways), shipwright, tailor, hotel porter, horsekeeper, glass blower, jeweller, stamper, electrician, wire rope maker, blacksmith, 'bus conductor, hairdresser, cellarman, school teacher, upholsterer, salesman, draughtsman, shop assistant, leather dresser, transport worker, bricklayer, ship's steward, seaman, and 2 stated they had no occupation. Total, 107.

OCCUPATIONS OF 50 FEMALE PATIENTS :—

Housewives	21
Shop Assistants	6
Clerks	5
Domestic Work at Home	4
Domestic Servants	4
Nurses.....	2

and one each of the following :—printer's feeder, school teacher, pottery worker, cashier, tracer, machinist, dressmaker, and hotel manageress. Total, 50.

It will be noted that the age period showing the largest number of cases is 25 to 30 years, closely followed by the 20 to 25 years old group.

The average duration of treatment of all cases was 158·5 days, or 38 days more than in 1928, whilst excluding the 12 non-tuberculous cases, the average period of residence of the tuberculous cases only was 168·3 days—5 weeks longer than in 1928. The 111 Newcastle tuberculous cases alone averaged 184·7 days. The longest stay made by any completed case was 793 days, the shortest 2 days. The average number of beds occupied

during the year was 84·7 ; 54·5 being occupied by males and 30·2 by females. The total number of patient days was 30,933, divided into 19,892 male and 11,041 female.

Below is given an analysis of the average number of beds occupied and the number of patient days :—

Authority.	Average Beds occupied daily.	Patient Days.
Newcastle Corporation	63·7	23,265
Gateshead Corporation.....	9·96	3,637
Tynemouth Corporation	3·03	1,108
West Hartlepool Corporation	5·32	1,942
Tynemouth Union	·15	55
Private Cases	1·51	554
Post Office Sanatorium Society	1·117	408

Diagnosis.

The diagnosis of pulmonary tuberculosis was confirmed bacteriologically either before admission or during residence in 129 cases ; 88 males and 41 females. 24 patients—18 males and 6 females—were apparently without tubercle bacilli in the sputum, and 1 male and 3 females said they had no expectoration ; making 28 cases of tuberculosis in whose sputa tubercle bacilli had never been demonstrated. The clinical examination findings in all sputum negative cases can be divided as follows :—

Not suffering from clinical tuberculosis.....	12
Definite pleural tuberculosis without evidence of lung tuberculosis	12
Definite physical signs and X-ray evidence of lung tuberculosis without demonstrable bacilli	16

In the cases of the 16 patients in the last group, the radiographs all showed appearances suggesting the presence of deposit in pulmonary situations for which

tuberculosis shows a predilection. 3 of the cases were of minimal degree. There is little doubt that these were true cases of pulmonary tuberculosis. In connection with these 16 cases in whose sputum tubercle bacilli could not be found, 163 sputum examinations were made, or an average of 10 examinations each. As 6 of these patients had no sputum of any description, the average number of sputum examinations for those that had was 16.

1,032 sputum examinations were made at the Sanatorium during the year; of these 316 were positive as regards the presence of tubercle bacilli, and 716 were negative.

As in the past, great care has been given to the establishment of the diagnosis. All cases without bacilli in the sputum have been regarded as doubtful until definite diagnostic criteria have been fulfilled. A diagnosis in a doubtful case is established only after a residence of three weeks, during which time three or more examinations of the chest are made, with careful rectal temperature recording, numerous sputum examinations, and the study of X-ray films of the lung fields, together with examinations of other systems and special investigation when necessary.

Lipiodol injections have been employed, and in numerous cases the information obtained has been of the utmost value, giving conclusive appearances in the cases of bronchiectasis, and negative information of value in excluding this condition in others.

953 complete examinations of the chest were made during the year, together with routine examinations of the larynx and urine on admission of the patient, and subsequently when necessary.

During the year, 12 cases were discharged as not suffering from pulmonary tuberculosis, and the diagnoses in these cases were as follows :—

Pulmonary Fibrosis without evidence of Tuberculosis.....	4
Chronic Bronchitis	2
Bronchiectasis	2
Malignant disease of the lung	1
Mitral Stenosis and Regurgitation	1
No pathological condition detected.....	2

These 12 non-tuberculous cases were included in 14 patients sent for observation for the purpose of making a diagnosis. Two were found to be suffering from pleural tuberculosis.

The period of observation for the purpose of diagnosis is set out below :—

	Under 1 week.		1 to 2 weeks.		2 to 4 weeks.		More than 4 weeks.	
	M.	F.	M.	F.	M.	F.	M.	F.
Tuberculous.....	2	..	..	..	..	..
Non-Tuberculous	1	6	2	2	1
Doubtful

Treatment.

Few changes have been made in treatment. As in previous years, the practice of rest as the greatest of all therapeutic agents in the treatment of pulmonary tuberculosis has been maintained. Especially is this necessary in the cases where the temperature is found to be raised. On admission all patients are kept in bed whilst the range of bodily temperature at rest is investigated. If this is found to be raised, treatment in bed is continued until a normal range is secured, either by rest alone or aided by some suitable special form of treatment.

With a normal temperature the patient usually proceeds quickly to graduated exercise, and then to occupational therapy or more strenuous work. Much damage to health is caused by patients continuing to go about with a raised temperature before the nature of the ill-health is recognised. A raised temperature is one of the most constant signs of active tuberculous disease of the lungs, and its presence is an indication that rest is essential. To continue everyday activities with a bodily temperature higher than normal is likely to cause spread of disease and diminish definitely the chance of recovery. Progress towards health is frequently observed by patients to start from the time they were compelled to rest in bed on entering the Sanatorium. It cannot be too widely known that the success of sanatorium treatment depends on the principle of rest rather than on that of fresh air.

81 of the 157 definite cases of tuberculosis were found to have normal temperatures during the whole course of their residence. 76 patients were feverish at some time or other of their treatment in the sanatorium, spending amongst them 5,032 days in bed.

Afebrile throughout Treatment.	Febrile on Admission, Afebrile on Discharge.	Febrile Intermittently	Febrile throughout Treatment.	Afebrile on Admission, Febrile on Discharge.
81	31	21	22	2

Artificial Pneumo-thorax Treatment.—Only 28 of the tuberculous cases discharged during 1929 were found to be suitable for treatment by this means, but in 5 of them the lung could not be collapsed, owing to changes in the chest in the course of the disease. Of the 23 discharged cases in whom collapse was employed, 11 were right-sided

cases and 12 were left. In 6 of the cases the procedure was abandoned after an average number of 6 inductions each, because there was no improvement to justify continuing, but in the remaining 17 cases most valuable help was given the patient, and distressing symptoms were definitely controlled—raised temperature being reduced and cough and sputum very much diminished, where not abolished. Eight cases developed a pleural effusion on the side of the pneumo-thorax. In 6 of them the amount of fluid was small, and did not interfere with the procedure, but in 2 the effusion was large. In connection with these cases, 194 inductions were performed. During the year, however, including pneumo-thorax cases who were not discharged, the total number was 376.

It should be noted that the above information does not refer to the full artificial pneumo-thorax work for the year (excepting the last figure), but only that in connection with the discharged cases.

Sanocrysin.—Similarly, the account of the work with sanocrysin refers to the 9 discharged cases who received treatment with this drug, but does not include those who had it but were still in residence at the end of 1929.

In 4 of the cases, administration was discontinued after a few doses only, in one because the patient's health continued to deteriorate very rapidly, in the second owing to the occurrence of severe diarrhoea after each dose, in the third owing to the development of a grave rash, whilst in the fourth case, sanocrysin was abandoned on account of the inaccessibility of the veins of the patient. In the other 5 cases, extraordinarily good immediate results were obtained. They had all made

no progress under routine treatment, and their temperatures remained uncontrolled. In 2 cases the induction of an artificial pneumo-thorax had failed to help, whilst in the others bi-lateral disease of such a character was present as to make treatment by artificial pneumo-thorax injudicious. In all these cases, therefore, the outlook was very gloomy, but the administration of 5 grams of sanocrysin intravenously in each case resulted in the restoration of excellent general health, with gain of weight, control of raised temperature, and ability to do full exercise and occupational therapy without fatigue or ill-effect, until discharge from the Sanatorium. Tubercle bacilli, though much reduced in numbers, continued to be present, excepting in one case where they remained absent up to the time of the patient's leaving. Albuminuria occurred in no case, but severe diarrhoea troubled one patient for ten days following his final 1·0 gram dose. This cleared up ultimately.

As no case of non-pulmonary tuberculosis was treated at the Sanatorium during the year, no treatment by *Ultra Violet Radiation* was given, as it is felt that its use in cases of pulmonary or pleural tuberculosis in adults is of no value, and not without risk in the former condition.

Since the date of the last report, the establishment of a periodic dental clinic at Barrasford has been approved and is now in process of being organised.

Results of Treatment.

As in previous years, the immediate results of treatment seemed to be good. The majority of the patients regain all the outward appearances of good general health, but unfortunately, despite the increased period of residence, sufficient time is not given for definite heal-

ing of the pulmonary ulceration to have taken place. The test of the value of the principles inculcated into patients whilst they are undergoing treatment is made as soon as they return to their homes. There is no reason why a number of sanatorium patients who are engaged in the less laborious occupations should not consolidate the improved health gained at the Sanatorium. After all, the majority have good or moderately good homes, and those who are fortunate enough to have work as clerks, shop assistants, etc., where the working hours are fixed, and the employment does not involve continuous physical exertion, have much in their favour. The most patent cause of relapse is fatigue and lack of rest. As rest is the most important factor in treatment, so lack of it is the most powerful cause of breakdown. The ex-sanatorium patient must adjust his life so that fatigue is mitigated as much as possible. With a few striking obvious exceptions, the best work he can return to is that with which he is most familiar. The impractical advice of the early part of the century, that the tuberculous must have "outside jobs" is dying (would that its demise could be hastened), and it is being realised, as has been pointed out in these reports for some years, that fresh air is not the essential factor in the treatment and employment of the tuberculous, but that rest and avoidance of fatigue are of prime importance.

It is significant that no less an authority than the National Association for the Prevention of Tuberculosis has inaugurated for youths a scheme of concurrent treatment under sanatorium conditions and training in clerical work. It is to be hoped that this example will do something to break down the false tradition of the necessity of open air work for the tuberculous, that leads to so many ex-patients, who previously held suitable inside posts,

being refused work on leaving a sanatorium, on the grounds that inside work is an unthinkable proposition for a tuberculous person.

If the patient with minimal disease, on completion of a fair period of sanatorium treatment (say 12 months), will avoid fatigue and spend a large portion of his spare time in resting, and further, treat any rise of temperature promptly by rest in bed, as learnt in the sanatorium, then the benefits of institutional treatment would be consolidated in a much greater proportion of cases than in the past. This advice is exceedingly difficult to follow in practice, and it is only a minority of strong-minded patients who can bring themselves to be patient for the requisite period of two years or so without relapse, before which they cannot afford to relax.

The weight records of the 157 definite cases of tuberculosis of the lungs or pleura, and those of the 12 non-tuberculous cases, are as follows :—

		Gained up to 7 lbs.	Gained 7 to 14 lbs.	Gained over 14 lbs.	Remained station- ary.	Lost up to 7 lbs.	Lost over 7 lbs.	Not weighed on discharge.	Total.
157 definite cases.	Gained weight..	40	62	28	..	..	..	..	130
	Lost weight....	..	..	..	..	18	5	..	23
	Stationary ....	..	..	..	3	..	..	..	3
	Not weighed on discharge....	..	..	..	..	..	..	1	1
	Total.....	40	62	28	3	18	5	1	157
12 non tuber- culous cases.	Gained weight..	8	1	1	..	..	..	..	10
	Lost weight ..	..	..	..	..	1	..	..	1
	Stationary ....	..	..	..	1	..	..	..	1
	Not weighed on discharge....	..	..	..	..	..	..	..	..
	Total.....	8	1	1	1	1	..	..	12

Under the classification of cases introduced by the Ministry of Health, patients suffering from pulmonary tuberculosis are divided into :—

Class T.B. Minus, or those cases in which tubercle bacilli have never been demonstrated in the sputum, and,

Class T.B. Plus, viz., cases in which tubercle bacilli have at any time been found.

The latter class is further divided into 3 groups :—

Group 1.—Cases with slight constitutional disturbance, if any, and in which the obvious physical signs are of very limited extent.

Group 3.—Cases with profound systemic disturbance or constitutional deterioration, with marked impairment of function, and with little or no prospect of recovery.

Group 2.—All cases which cannot be placed in Groups 1 or 3.

To indicate results of treatment, the following terms are laid down :—

“ Quiescent.”—Cases which have no symptoms of tuberculosis and no signs of tuberculous disease, except such as are compatible with a completely healed lesion, and in which the sputum, if present, is free from tubercle bacilli.

“ Arrested.”—In pulmonary cases the term should be applied only to cases which have been “ quiescent ” for a period of at least 2 years.

“ Improved.”—Cases short of “ quiescent,” in which the general health is fair and the symptoms of tuberculosis have materially diminished.

“ No Material Improvement.”—All other patients who are alive.

When considered in these terms, the results of treatment of the 157 cases of lung or pleural tuberculosis can be set out as follows :—

		T.B. Minus.		
		M.	F.	Total.
Quiescent		10	3	13
Improved.....		7	4	11
No material improvement ..		2	2	4

		T.B. Plus.		
		M.	F.	Total.
G.1	{ Quiescent .....	..	..	..
	{ Improved .....	..	1	1
	{ No material improvement ..	..	..	..
G.2	{ Quiescent	2	..	2
	{ Improved	53	28	81
	{ No material improvement ..	15	6	21
G.3	{ Quiescent .....	..	..	..
	{ Improved	5	..	5
	{ No material improvement ..	13	6	19

The comparatively large numbers of T.B. minus cases which improved to the degree of quiescence, is made up of the cases of pleural tuberculosis, which had no evidence of disease in the lungs themselves, and on discharge had no symptoms, no sputum, and no signs of anything but pleural thickening. It will be seen that a large proportion of the cases sent for treatment had extensive disease on admission, and that the results of treatment are best in the sputum negative class, and the two higher groups of the sputum positive cases.

I am greatly indebted to the Matron (Miss F. Baguley, A.R.R.C.), for her continued co-operation, and thanks are due to the whole of the staff for their assistance.

CECIL G. R. GOODWIN,

Medical Superintendent.

Barrasford Sanatorium,

Northumberland,

7th May, 1930.

REPORTS OF THE VETERINARY OFFICER
AND INSPECTOR OF PROVISIONS,
AND OF THE INSPECTOR UNDER THE FOOD AND
DRUGS ACTS (SENIOR SANITARY INSPECTOR).

V.—FOOD.

BOVINE TUBERCULOSIS.
INSPECTION OF MEAT AND PROVISIONS.
INSPECTION OF FOOD AND DRUGS.

BOVINE TUBERCULOSIS, AND THE INSPECTION OF MEAT AND PROVISIONS AND FOOD AND DRUGS.

TUBERCULOUS MILK.

During the year 33 samples were reported by the Bacteriologist to contain tubercle bacilli. The samples were obtained from 22 different farms, and six of them were taken as checks on samples from two farms, the milk from which had been found tuberculous during 1928. Three of the farms concerned were in the City and the others were situated as follows :—Northumberland 14, Cumberland 2, Dumfriesshire 1, North Riding of Yorkshire 1, while in one case the source of the milk could not be traced. The last named was a sample of mixed milk from a dairy in Gateshead. The milk is put up in bottles and is then treated by heat to a degree which is presumably more than sufficient to destroy the tubercle bacillus. The facts were reported to the Medical Officer of Health of Gateshead, but no further information could be obtained.

The results of the investigations at the farms may be summarised as follows :—

Cases in which tuberculous cows were found (subsequent checks were negative).....	10
Cases in which tuberculous cows were found, but in which check samples could not be obtained	2
Cases in which no tuberculous cows could be found (subsequent checks all negative)....	9
Source not traced	1
	—
Total	22
	—

Year.	Percentage of Samples found Tuberculous.
1907	5.9
1908	3.8
1909	9.0
1910	5.4
1911	3.0
1912	10.4
1913	8.4
1914	6.7
1915	5.8
1916	8.7
1917	3.1
1918	2.9
1919	3.6
1920	6.3
1921	5.5
1922	7.0
1923	4.5
1924	3.2
1925	8.0
1926	4.0
1927	3.7
1928	3.7
1929	8.7

Report of the
Veterinary Officer, Inspector of Meat, etc.

TO THE MEDICAL OFFICER OF HEALTH.

I have pleasure in submitting the following Report which includes the work of inspection under the Public Health Acts during the year 1929.

DISEASES OF ANIMALS.

Diseases of Animals Acts, 1894-1927.

During the year seven outbreaks of scheduled diseases occurred amongst the animals within the City, as compared with the same number during the previous year. Four of the outbreaks were due to disease communicable from animal to man.

Tuberculosis.

During the year, while inspecting dairy herds within the City, four animals were found affected with one of the forms of the disease which require them to be dealt with under the Tuberculosis Order of 1925. In each case the milk, in the first instance, was excluded from the public supply. The animals were valued and slaughtered, and in three cases it was found necessary to destroy the entire carcass and internal organs as being unfit for sale for human consumption. The owner in each case was paid compensation according to the value of the animal before slaughter, as valued by the Veterinary Officer on behalf of the Corporation, and agreed to by the owner.

When the total amount paid as compensation to owners, costs for slaughtering, etc., was deducted from the total amount obtained through the disposal of

carcasses, hides, offal, etc., together with the amount recoverable from the Ministry of Agriculture, there remained a balance of £6 7s. 10d. in favour of the Corporation on the administration of the Tuberculosis Order during the year.

In the course of meat inspection within the City during the year, 450 animals were found, on slaughter, to be affected with the disease, this being a decrease of 13·6 per cent., as compared with the previous year.

In 292 cases some part of the carcass or internal organs of each was condemned and destroyed, whilst in the case of each of the remaining 158 animals it was found necessary, owing to the extent and distribution of the disease, to destroy the entire carcass and internal organs.

Anthrax.

Whilst no cases of suspected anthrax were notified during the year, it was found necessary, as a precautionary measure, to examine, microscopically, material from the carcasses of five animals slaughtered within the City, and which presented evidence of imperfect bleeding. Fortunately, in none of the cases, was the disease found present.

Within Great Britain 439 outbreaks of the disease were confirmed, in which 529 animals were attacked, as compared with 533 outbreaks during the previous year, in which 615 animals were attacked.

Rabies.

During the year no suspicious cases have been reported for investigation, and no case of the disease has occurred within the country since the year 1922.

LIVE STOCK AND MEAT SUPPLIES.

During the year under report, according to official statistics, cattle, sheep, and pigs within Great Britain have decreased by 49,742, 317,341 and 657,787, respectively, thus leaving a total of 7,190,539 cattle, 23,660,973 sheep, and 2,508,760 pigs. The number of cattle, sheep, and pigs in England and Wales alone showed decreases of 68,839, 294,157 and 604,500, respectively, as compared with the previous year's totals.

Notwithstanding these decreases, the number of cattle recorded for England and Wales is equivalent to 15,980, or $\cdot 3$ per cent. greater than the average for the past ten years, whilst the number of sheep recorded was equivalent to 1,029,392, or 6 \cdot 8 per cent. greater than the average for the same period. The greatest reduction in the number of cattle occurred in Wales where, out of a total of about three-quarters of a million, there was a reduction of more than 24,000, whereas in England alone, where cattle total over five millions, the reduction amounted to only about 25,000. In some parts of England, notably Yorkshire, Norfolk and Durham, the year's totals showed an increase. The greatest increases would appear to have occurred north of the Tweed, one of the chief sources of supply for the City's markets. Within the county of Northumberland, the numbers of cattle and sheep have remained almost stationary, there being 500 fewer cattle and 2,500 fewer sheep than recorded the previous year.

The imports of live cattle from countries other than Ireland during the year amounted to 692, as compared with 81,745 imported three years ago. For many years the rate of increase in the production of cattle within this country has been slower proportionately than that

of the population. During the same period the imports of meat foodstuffs have been gradually increasing in an apparent attempt to fill the ever-increasing gap between supply and demand. In this connection it is interesting to note that during the past two years the imports of beef from over the seas have for the first time shown a definite decrease, 11,755,743 cwts. having been imported during 1929, as compared with 13,435,937 cwts. in 1927. Further, the only fresh pork imported was from the Irish Free State. The total was 296,217 cwts., or 91,000 cwts. less than the previous year. From the same country 749,570 cattle, 584,631 sheep and lambs, and 311,102 pigs were imported during the year. These figures indicate decreases in sheep and pigs, and an increase in the number of cattle imported to the extent of 25,000.

Inspection of Meat and Other Foods.

The number of animals slaughtered within the City for food purposes was 170,177, this being a decrease of 21,351, as compared with the previous year. The decrease occurred with sheep and pigs only, as the number of cattle slaughtered showed a considerable increase.

Of the carcasses and internal organs examined, including those dressed outside and sent into the City for disposal, tuberculosis was found present in those of 450 animals, a decrease of 13.62 per cent., as compared with the previous year.

500 animal carcasses, together with 1,923½ lbs. of meat (excluding offal, etc.), were condemned and destroyed as being unfit for human consumption, as compared with 504 animal carcasses and 1,989½ lbs. of meat condemned and destroyed during the previous year. Of

the 500 carcasses, 159 (158 carcasses and 4 quarters and 63 lbs.) were condemned on account of tuberculosis, as compared with 164 (161 carcasses and 12 quarters) condemned for that disease out of the previous year's total of 504 carcasses.

Whilst the total number of cattle slaughtered was 18,059, or an increase of 546, as compared with the previous year, it may be of interest to observe that the number of whole carcasses from these animals condemned and destroyed on account of tuberculosis was 8 per cent. larger than the number destroyed for that disease during the previous year, whilst those condemned and destroyed for conditions other than tuberculosis showed a similar increase.

For the purposes of the Public Health (Meat) Regulations, 1924, 2,212 visits were made to meat and provision shops, restaurants, stalls, vehicles, etc., and, as a result, 25 contraventions were discovered and dealt with. In one case the contravention concerned the opening of a W.C. directly into a room used for the preparation and storage of food. In 16 cases it was necessary to enforce measures for the prevention of food being exposed to the risk of contamination. In two cases butchers were warned against the use of slaughter houses for the purpose of gut-scraping, whilst in six cases slaughter-men were warned against the practice of meat-blowing. It should be added that in every instance, following the written or verbal request, the offence complained of immediately ceased.

Imported Foodstuffs.

During the year some 304 vessels, carrying foodstuffs from Denmark, Sweden, Holland, Canada, Australia and America arrived at the Quayside, as compared with 295 vessels during the previous year.

Whilst a year ago a considerable falling off in the imports of American bacon and hams was reported, one has to report that during the year under review these imports reached only half the quantity as compared with the previous year. The imports of sides of Danish bacon, on the other hand, more than made up the deficiency in quantity, for the year's total from this source exceeded the previous year's imports by a little over 13 per cent.

Three hundred and ninety-eight visits were made to the wharves and vessels alongside, 1,800 packages containing meat, etc., being opened and examined. Regarding these visits, two were in response to official notices received from the Customs House concerning foodstuffs detained by the Customs Officials for our inspection and certification.

The imported meat arriving within the City by rail is subjected to inspection and supervision within the wholesale shops and cold storage depots.

Caseous Lymphadenitis.

In the last Annual Report it was pointed out that during the year 1928 a number of carcasses of mutton, included in South American consignments to this country, had been found, on inspection within the City, to have been tampered with before export by the deliberate removal of certain of the lymphatic glands. Such a practice, whether intentional or otherwise, when undetected, is calculated to partly defeat the object of inspection. As caseous lymphadenitis is a serious systemic condition, with lesions chiefly confined to the lymphatic system, the only remedy against the practice referred to, and as a safeguard to the consuming public, was to seize and destroy all carcasses from which the important

glands had been removed, whether disease was present in the remaining glands or otherwise. That the measures taken have had the desired effect appears certain, for during the year under report no imported carcasses examined within the City have been found tampered with.

During the year, out of 102 separate consignments from South America, via Liverpool and London, 3,945 carcasses have been examined, 110 being found diseased and therefore condemned and destroyed.

Exported Foodstuffs.

The number of horses slaughtered within the City, for the purpose of the carcasses being exported for consumption on the Continent, was 2,107, as compared with 1,747 slaughtered during the previous year. To meet the requirements of regulations enforced by the Commonwealth of Australia, the Dominion of Canada, and the United States of America, concerning the importation of various kinds of cooked foodstuffs into those countries derived from meat of animals slaughtered within or slaughtered outside and imported into Great Britain, 48 certificates were granted during the year to a wholesale meat preserving firm within the City, concerning the wholesomeness and freedom from disease of materials used in the preparation of consignments for export.

Slaughterhouses.

During the year 102 separate premises (as compared with 102 the previous year) were licensed for slaughtering purposes. These comprise five groups and a number of separate establishments in various parts of the City. Four of the licensed premises are used exclusively for the purpose of horse slaughtering. In addition, there are two establishments near the river in the St. Lawrence district licensed and used as knacker's yards.

During recent years the Special Committee, appointed to deal with the provision of centralised abattoirs and markets, have surveyed a number of areas, and have now decided to negotiate for the acquisition of a site which appears to meet all requirements for the purpose. In the selection of a site for such purposes, it is essential to bear in mind that such a scheme is designed with the primary object of abolishing public nuisances, to make it possible to properly inspect carcasses intended for food, and also to provide the conditions under which the control or prevention of contagious animal diseases may be efficiently carried out. On the other hand, while the Committee have regard to these requirements, they have considered the necessity for providing such facilities as will enable not only cattle salesmen, auctioneers and others to do greater business in live stock than ever within the district, but to provide the most convenient conditions for meat traders, whether in the centre, east or west end of the City, to purchase, slaughter and remove their carcasses to their respective shops. The possibility of providing the necessary facilities in the neighbourhood of the present Cattle Market, in view of the increasing difficulties concerning road traffic and the cost that would be involved in obtaining a suitable site there, are questions dealt with in a special report about to be submitted on the provision of abattoirs for the City and an abattoirs and markets scheme.

Microscopical Examinations.

During the year, microscopical examinations were made, as an aid or confirmation of diagnosis, in connection with twenty-nine separate cases under investigation. The material examined comprised specimens of milk, blood, tissues, and swabs taken from the throats

of cows. Of the samples of milk examined for tuberculosis, five were found positive. In none of the specimens of blood examined for anthrax was that disease found present. The throat swabs were negative, whilst two of the tissue smears examined for tuberculosis gave positive results. In three cases examined for parasites, two proved negative.

Rats and Mice (Destruction) Act, 1919.

During the year, 94 visits were made to premises in respect of complaints received, and to other premises involved. Of the 117 separate premises dealt with, rats were found infesting 95, the remaining 22 being found free from the pests. Poisons and traps have been made use of with considerable success in many cases ; in others, it was found necessary to have certain structural defects remedied before the pests could be eliminated. Whilst the problem of keeping premises rat-proof is one that largely involves the question of building construction and repair, the duty of preventing the accumulation of rubbish as an attraction to rats within premises, beside protecting edible articles of every description, is one that entirely devolves upon the occupiers.

Legal Proceedings.

A butcher was fined £5 for having deposited for the purpose of preparation for sale within a slaughterhouse one side of pork which was diseased ; a further fine of £5 being inflicted for sending to a shop within the City for the purpose of sale, a side of pork which was, to the sender's knowledge, diseased.

The Milk and Dairies Order of 1926.

Within the City there are 19 cow-keepers, who occupy 30 cowsheds on 20 premises, and possess a total of 258 milch cows. During the year 191 visits were made to the cowsheds and dairies for the purpose of inspecting the buildings, and the conditions as to cleanliness, etc.

DISEASED COWS FOUND IN REGISTERED PREMISES WITHIN THE CITY.

Year.	No. of Cow-keepers.	No. of Registered Cowsheds.	No. of Dairy Premises.	No. of Milch Cows in City.	No. of Diseased Cows.				
					Tuberculosis		Other Diseases		Destroyed. (under the Tuberculosis Order, 1925)*
					Of Udder.	Other than Udder.	Udder.	Other than Udder.	
1909	41	..	..	527	5	2	4	1	5
1910	38	41	..	503	1	1	8	..	1
1911	37	44	38	497	1	..	4	..	1
1912	37	44	37	465	2	..	1	..	..
1913	31	43	33	469	2	2	..	..	..
1914	31	43	33	510	1	1	1	..	..
1915	31	43	33	554	3	..	6	..	..
1916	30	44	32	536	2	2	12	..	1
1917	30	44	32	512	1	..	..	..	..
1918	29	43	31	622	..	..	..	..	..
1919	27	41	29	594	..	..	..	..	..
1920	26	40	28	565	..	..	..	..	..
1921	25	38	26	575	..	..	..	..	..
1922	25	39	26	489	..	..	..	..	..
1923	25	39	26	484	2	..	8	..	1
1924	22	34	23	436	3	2	2	..	4
1925	21	33	23	337	9	..	1	..	3*
1926	20	31	21	410	5	2	1	3	5*
1927	18	29	19	334	2	4	2	3	6*
1928	19	31	20	308	3	1	1	3	4*
1929	19	30	20	258	4	1	1	2	4*

NUMBER OF ANIMALS EXHIBITED WITHIN THE NEWCASTLE CATTLE MARKET.

Year.	Cattle.	Calves.	Sheep.	Swine.	† Dairy Cows.
1887	110,074	8,780	325,473	28,964	—
1897	99,084	7,304	310,382	31,798	—
1908	87,447	8,145	302,608	38,466	—
1909	85,110	6,950	323,780	31,189	—
1910	77,347	6,469	306,703	27,089	—
1911	70,337	5,841	305,418	37,754	—
*1912	48,222	4,646	227,046	32,562	—
1913	63,683	4,455	271,887	27,468	—
1914	55,617	4,376	258,976	26,507	—
1915	53,689	3,677	248,291	25,062	—
1916	52,251	980	248,356	23,796	—
1917	47,906	1,192	216,920	15,474	—
1918	32,948	42	201,071	148	—
1919	33,664	329	145,613	89	—
1920	32,577	2,064	129,606	5,923	—
1921	35,000	1,765	210,000	1,154	—
*1922	21,921	1,432	140,389	16,521	278
*1923	28,828	1,665	138,447	5,545	99
*1924	18,555	458	68,654	15,684	—
1925	31,397	1,394	135,468	3,302	512
1926	29,368	755	147,461	893	413
1927	32,697	1,318	182,409	1,045	500
1928	33,531	1,585	201,825	2,644	395
1929	34,697	1,796	197,225	2,189	392

The Market Day was changed from the Tuesday to the Monday of each week as from 31st July, 1922.

* Market closed for some time during each of these years owing to extensive outbreaks of Foot-and-Mouth Disease in the district.

† Milch Cows sold on Fridays within the Cattle Market lairs.

ANIMALS SLAUGHTERED ON LICENSED PREMISES WITHIN THE CITY.

YEAR 1929.		1928.	1927.	1926.	1925.
Horses	2,107	1,747	1,740	1,416	2,244
Cows	822	18,059	17,513	19,246	17,970
Heifers ...	11,619				
Bulls	445				
Bullocks ..	5,173				
Calves	4,843	4,299	5,249	4,764	3,763
Sheep	103,497	121,005	137,120	104,065	94,950
Pigs	41,671	46,964	42,849	34,427	36,021
Total Animals	170,177	191,528	206,204	162,642	155,464

Cattle, Calves and Pigs Slaughtered within the City. (See also previous Table).	Number of Animals found Diseased, Unsound or otherwise unfit for Human Consumption.		*Number of Animals found Tuberculous.	
	Whole Carcasses Condemned.	§ Parts or Organs Condemned.	Whole Carcasses Condemned.	† Parts or Organs Condemned.
Year 1929.	Year 1929.			
Cows..... 822	60	51	59	47
Heifers .....11,619	42	31	39	26
Bulls 445	3	6	1	6
Bullocks 5,173	20	27	19	25
Totals.... 18,059	125	115	118	104
Calves 4,843	49	20	4	—
Pigs 41,671	74	303	36	144

† Sex not known, 44.

§ „ „ 464.

* The figures representing the numbers of animals found tuberculous on slaughter do not necessarily indicate the total number of animals affected with disease, because under the present slaughter-house system it is impossible to guarantee that all those slaughtered are subjected to inspection.

CARCASSES OF BEEF CONDEMNED WITHIN THE CITY DURING THE
PAST TWENTY YEARS.

Total Condemned.		Numbers condemned on account of Tuberculosis.	Percentage Tuberculous.
Year.	Carcasses.	Carcasses.	Per Cent.
1910	116	110	94·82
1911	88	79	89·77
1912	79	73	92·40
1913	92	89	96·73
1914	83	70	84·43
1915	96	88	91·66
1916	109	103	94·49
1917	98	92	93·87
1918	230	182	79·13
1919	306	267	73·0
1920	198	171	86·36
1921	90	78	86·66
1922	85	79	92·94
1923	69	58	84·05
1924	66	61	92·42
1925	157	130	82·80
1926	126	102	80·95
1927	123	107	86·99
1928	115	109	94·78
1929	124	118	95·16

NOTE.—The above refers to whole carcasses and quarters, but does not indicate the total number of animals found tuberculous, and therefore does not include those carcasses in which only the organs or parts were found diseased and condemned. See preceding table.

NUMBER OF VISITS AND INSPECTIONS OF PREMISES DURING THE YEAR 1929.

Slaughter Houses.	Central Markets.			Meat Shops.		Fish Shops.		Provision Shops.		Fruit Shops.		Wharves and Vessels.	Cold Stores.	Goods Stations (Fish Docks).	Food Preparing Factories.	Restaurants.	Stalls, Carts, etc.	Fish Curing Establishments.
	Meat and Provisions.	Fruit and Vegetables.	Fish.	Wholesale.	Retail.	Wholesale.	Retail.	Wholesale.	Retail.	Wholesale.	Retail.							
4,816	413	315	314	3,653	670	77	12	25	13	14	2	398	118	12	1	92	1024	2

Foreign Meat, etc., Arriving by Vessel.*Fresh Offal, etc. (Packages).*

FIG.—2,351 feet, 1,556 maws, 7 tongues, 1,692 heads, 363 sausage casings, 19 rinds and 1 pig necks.

Frozen Meat.

BEEF.—800 fore and hind quarters. Packages :—1,051 crops, 201 boneless shin beef and 100 tops and rumps.

Mutton and Lamb Carcasses, 3,700.

Salted Meat.

PORK.—249 barrels.

Other Goods (Cases, etc.).

6,833 American bacon and hams, 1,006,216 sides Danish bacon, 29,890 tinned meats and 279 sausages.

NUMBER OF VESSELS AND ORIGIN, ARRIVING WITH FOOD.

Denmark.	Holland.	Norway.	America.	Canada.	Sweden.	Australia.
110	129	10	14	15	24	2

Total Weight of Meat and Other Foodstuffs Condemned.

The approximate total weight of meat and other foodstuffs condemned during the year was 64 tons 12 cwts. 3 qrs. 6 lbs., comprising :—

	tons.	cwts.	qrs.	lbs.
Beef, Mutton, Veal, Pork	44	1	3	22
Offal, Provisions, etc.	20	10	3	12
	64	12	3	6

POULTRY, GAME, FISH, FRUIT AND VEGETABLES, PROVISIONS, &c., DESTROYED AS BEING UNFIT FOR HUMAN CONSUMPTION
DURING THE YEAR 1929.

Cause of Unfitness.	Poultry and Game.	Fish.	Fruit and Vegetables.	Provisions, &c.
Unsound and Unwholesome.	Chickens 44 Ducklings . . . 16 Fowls 57 Hare 1 Rooks 310 Rabbits 64 Turkey 1	Cod lbs. 838 Dog Fish 700 Filletts—3 boxes.. 14 Halibut 405 Herring 224 Haddocks—2 boxes 623 Plaice 2,808 Roe 4,992 Smelts, 104 cases Sole 392 Salmon 14½ Skate 1,996	Apples 30 lbs. Bananas 319 bunches Grapes 9 barrels Plums 100 chips Potatoes 16 tons 11 cwts. Tomatoes 96 lbs.	Bacon lbs. 1,639 Cheese 140 Flour 11½ Ham Rinds 996 Margarine 112 Sausage 35 Tea 336 Eggs 339
		<div>SHELL.</div> <div>Prawns (8 cases & 1 tin.</div>		<div>TINNED GOODS. Tins.</div> <div>Beans 2</div> <div>Cream 1</div> <div>Chicken & Ham Paste 10</div> <div>Fruit (Mixed) . . . 108</div> <div>Jam (Mixed) 271</div> <div>Milk 348</div> <div>Pilchard 100</div> <div>Peas 2,021</div> <div>Peaches 4</div> <div>Pears 2</div> <div>Pineapple 28</div> <div>Prunes 1</div> <div>Sausage 90</div> <div>Tomatoe 77</div> <div>Tomatoe Puree . . . 735</div> <div>lbs.</div> <div>Brawn 36</div> <div>Corned Beef 9,169</div> <div>Lunch Tongue . . . 523</div> <div>Pork 6</div>

CARCASSES, &C., DESTROYED AS BEING UNFIT FOR

	Carcasses, &c.				Lungs.			Hearts.			Kidneys.	
	Beef.	Veal.	Mutton.	Pork.	Sets Ox.	Sets Sheep.	Sets Pig.	Ox.	Calf.	Sheep.	Ox.	Pig.
Tuberculosis	118+4 qrs. + 51 lbs.	4	..	36+12 lbs.	129	..	2	17	..	..	3	..
Swine Fever .....	..	..	..	..	..	..	..	..	..	..	..	..
Caseous Lymphadenitis ..	..	..	110½	..	..	..	..	..	..	..	..	..
Actinomycosis .....	..	..	..	..	1	..	..	..	..	..	..	..
Jaundice .....	..	1	..	1	..	..	..	..	..	..	..	..
Metritis	1	..	..	..	..	..	..	..	..	..	..	..
Pyæmia	1	1	1	..	..	..	..	..	..	..	..	..
Pyrexia .....	..	..	..	3	..	..	..	..	..	..	..	..
Septic Conditions .....	..	..	..	1	..	..	..	..	..	..	..	..
Fatty Degeneration .....	..	..	..	..	..	..	..	..	..	..	2	..
Cirrhosis .....	..	..	..	..	..	..	..	..	..	..	..	..
Melanosis .....	..	..	..	..	1	..	..	..	..	..	..	..
Angioma .....	..	..	..	..	..	..	..	..	..	..	..	..
Lymphadenoma .....	..	..	..	1	..	..	..	..	..	..	..	..
Pneumonia .....	..	4	3+2 qrs.	..	2	2	30	..	..	..	..	..
Pleurisy .....	..	..	..	..	8	..	5	1	..	..	..	..
Pleurisy and Peritonitis ..	1	..	..	4	..	..	..	..	..	..	..	..
Pericarditis .....	..	..	..	..	..	..	..	1	1	..	..	..
Peritonitis	1	1	3	1	..	..	..	..	..	..	..	..
Nephritis .....	..	..	..	..	..	..	..	..	..	..	4	..
Ascites .....	..	..	1	..	..	..	..	..	..	..	..	..
Œdema and Emaciation ..	..	..	51	1	..	..	..	..	..	..	..	..
Abscesses	39 lbs.	..	2+46 lbs.	9 lbs.	13	4	..	..	..	..	..	..
Parasites (distomatosis, cysts, etc.) .....	..	..	..	..	2	28	..	..	..	..	..	..
Imperfect Bleeding, Con- gestion, etc.	1	5+2 qrs.	45	11	4	..	..	1	..	..	2	..
Immaturity .....	..	2	..	..	..	..	..	..	..	..	..	..
Traumatism	1+1 qr. + 687 lbs.	1	1+1 qr. + 24 lbs.	..	2	..	..	2	..	..	3	..
Decomposition	931½ lbs. + 4 qrs.	30½	28½+ 12 qrs. + 26 lbs.	15+98 lbs.	12	7	..	2	..	12	4+5 lbs.	..

HUMAN CONSUMPTION DURING THE YEAR 1929.

Livers.			Heads.				Plucks.			Cow's Udders.	Tongues.	Tongues.			Caul Fat.	Stomachs and Intestines.		Ox Intestines.		
Ox.	Sheep.	Pig.	Ox.	Calf.	Sheep.	Pig.	Calf.	Sheep.	Pig.			Ox.	Calf.	Pig.		Ox.	Ox Tripe.		Pig Maws.	Ox.	Pig.
2	..	136	..	..	92+8 halves.	..	..	36	7	..	12	..	..	..	..	36	5	9	..	..
.	240	..	..
.	2	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..
1
.
.
7
7	37	3	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
.
9
.	1	21	..	..	..	..	..	..	..	..	..	..	..
.	5	2	..	..	..	..	..	..	..	..	..	..	..
.
.
.
34	1	..	1	1	..	..	..	..	..	..	..	..	..	..	..	..
3+72 lbs.	493	1	..	..	6	..	..	167	12	..	..	..	..	..	..	..	..	..	..	..
3	8	1	..	..	..	..	..	..	..	..	..	..	..
..
1	4	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
35	32+80 lbs.	211	4	32	3½+7 cwts.	32	163	70	..	3½ cwts +6 cask	8	1	4	5	210 lbs.	48 cwts	..	..	..	1 cask

Yours faithfully,

Town Hall,
Newcastle-upon-Tyne,
8th August, 1930.

THOMAS PARKER, F.R.C.V.S.,
Veterinary Officer.

FOOD AND DRUGS ADULTERATION, Etc.

Total Samples.—The number of samples of foods and drugs obtained for analysis during the year was 1,172, as compared with 1,157 in 1928. They were of a varied nature, and included most articles in common use in the household. Of this number 609 were submitted to the Public Analyst, the remainder being samples of milk which were tested in the office and found to be genuine.

Informal Samples.—378 informal samples were taken as against 304 last year. Although legal proceedings cannot be taken in the event of such a sample not being genuine, this method is a guide to the general quality of food stuffs sold in any particular district. Any adulterated samples are followed up by taking “formal” or “official” samples, so that legal proceedings may be taken if necessary.

Milk Samples.—As usual, the greatest number of samples obtained has been of milk, one of the most important articles of food, and one which unfortunately lends itself to fraudulent practices. 785 samples were taken, and of these 22 were certified to be below the minimal limits fixed by the “Sale of Milk Regulations, 1901.” Of this number 5 were deficient in non-fatty solids, 16 in milk fat, and 1 in both. The percentage of deficiency in fat varied from 1·6 to 38·3 (the average being 9·7), and of solids not fat from 1·0 to 17·5 (average, 7·0.)

“Appeal to Cow” Samples.—Only in one case was it found necessary to visit a farm for the purpose of obtaining samples direct from the cows. Six samples of milk were taken, 5 of which proved to be genuine. The other was deficient in non-fatty solids.

Samples not Genuine, etc.—The percentage of all samples not genuine to the total number taken was 3·67 (compared with 6·13 for the previous year). This is the lowest percentage of adulteration on record. The percentage of non-genuine milk samples to the total number of milk samples obtained was only 2·80 (as against 6·37 in 1928). The total number of samples taken was at the rate of 4·14 per 1,000 of the population (estimated) of the City for the year 1929. This is in excess of the number suggested by the Ministry of Agriculture (viz., 3 per 1,000 of the population).

On an informal sample of “Rum and Coffee” being submitted for analysis, the analyst certified it to be “chiefly a sugar syrup with caramel containing a little synthetic flavouring resembling the flavour of rum, but containing no sensible alcohol and very little coffee. A “formal” sample was then obtained, which was certified to contain :—

Alcohol, under	0·30 per cent.
Caffeine	0·25 „
Sugar, extractive matters and water	99·45 „

As there is no statutory definition of “Rum and Coffee,” the Town Clerk was instructed to write to the manufacturers to the effect that it was a misdescription to call a substance containing such a small amount of rum “Rum and Coffee.”

Margarine.—22 samples of margarine were purchased and analysed. All were genuine, free from preservatives, and in compliance with the requirements of the Act in all other respects.

Margarine Warehouses.—41 visits were made to the registered margarine warehouses in the City. The packages were examined as regards proper marking, and all found to comply with the Act.

Preservatives in Food.—Of the total samples obtained for analysis (1,172) only 37 contained preservative, the quantity being, in most instances, well within the limit allowed.

The allowable limit of sulphur dioxide was exceeded in 5 samples of sausage. In 2 of these cases the samples were taken informally, and the subsequent formal samples being within the limit of preservative, the cases were met by cautions. Of the other 3 samples, 2 were obtained (informally and formally, respectively) from one vendor, who was summoned and fined £7. Proceedings also instituted in respect of the remaining sample resulted in a conviction and penalties of £10.

4 samples of jam (taken informally and formally, respectively, from two different dealers) contained an excess of sulphur dioxide. In these instances summonses were issued and afterwards withdrawn by order of the Health Committee, after the Town Clerk had been in correspondence with, and had also interviewed, the wholesale dealer and manufacturer.

OFFENCES OTHER THAN ADULTERATION.

OFFENCE.	No. OF CASES.	ACTION TAKEN, ETC.
<i>Milk and Dairies Order, 1926 :—</i> Milk churns and other vessels washed on public street (Section 21).	1	Offender cautioned.
Milk churns not thoroughly cleansed before being returned (Section 28).	22	Offenders cautioned.
Milk churns in a condition contravening the Order (Sections 27–29).	18	Do.
Carried forward ...	41	

OFFENCES OTHER THAN ADULTERATION—*continued.*

OFFENCE.	No. OF CASES.	ACTION TAKEN, ETC.
Brought forward	41	
Milk vessels filled from churn on railway station platform (Section 31).	1	Offender cautioned.
<i>Milk and Dairies (Consolidation) Act, 1915, Section 6 :—</i> Selling milk from cans and/or vehicles not inscribed with the name and address of the vendor.	1	Do.
<i>Milk and Dairies (Amendment) Act, 1922, Section 2, and Milk and Dairies Order, 1926, Section 6 :—</i> Selling milk without being registered for the purpose.	2	Offenders cautioned.
<i>Public Health (Preservatives, &c., in Food) Regulations, 1925-1927 :—</i> Selling sausage containing sulphur dioxide (in excess of the limit allowed) the presence of which was not declared as required.	2	Vendors summoned and fined respectively £2 and £5.*
Do. (in quantity within the permissible limit).	2	Offenders cautioned.
TOTAL	49	Amount of Penalties—£7.

* *Note.*—Also fined £5 in each case in respect of the excess preservative (see “ Food and Drugs ” Table, p. 235A).

The Public Health (Condensed Milk) Regulations, 1923-1927, and the Public Health (Dried Milk) Regulations, 1923-1927.

9 samples of condensed milk were obtained, 8 being genuine and in compliance with the Regulations with regard to composition and labelling.

The remaining sample contained compounds of tin and copper. This was obtained in consequence of complaints as to “ bad taste ” of the milk as supplied to an Institution in the City. The matter was taken up with the contractor by the Medical Officer of Health.

BACTERIAL IMPURITY OF MILK AND WATER.

Milk.—377 samples were examined by the Bacteriologist for the presence of tubercle bacilli, which were found in 33, or 8·7 per cent.

Action taken is described on page 209.

190 samples were examined for evidence of excremental pollution, which was found to an undesirable degree in 57, or 30·0 per cent. In every case the Medical Officer of Health of the district from which the milk originated was informed, with the result that steps were taken to secure more cleanly methods of production.

Approximate amount of Certified and Grade A. (Tuberculin Tested) Milk received in the City daily.—

Certified—70 gallons.

Grade A. (Tuberculin Tested)—600 gallons.

Cleanliness of Milk Churns.—During the year 21,933 churns awaiting return to the farmers were examined at the various railway stations in the City. Of this large number, only 13 (as compared with 20 in 1928) were found in an uncleansed condition. The offender in each case was cautioned by the Medical Officer of Health.

In addition, 3,531 churns in course of transit through the City were examined, and 19 (none last year) were found in a dirty condition. These matters were reported to the Medical Officers of Health of the Districts concerned.

18 farmer-consignors were also communicated with respecting churns found to be defective or not in conformity with the requirements of the Milk and Dairies Order.

Water.—Samples were collected from all parts of the City and at the water works, and examined for the presence of *bacillus coli*.

The results are described on page 148.

PREMISES ON WHICH FOOD IS PREPARED.

Bakehouses.—There are in the City 265 bakehouses, of which 35 are factories (*i.e.*, places in which mechanical power is used), and 230 are workshops.

The number of “domestic” bakehouses, or private dwelling houses in which the occupier makes bread for sale amongst the neighbours, is 98. Domestic bakehouses are under the same supervision as when the business is carried on in an ordinary bakehouse, and, generally speaking, are kept in a cleanly state.

In three cases, however, it was found that baking was being carried on in the same room as was used for sleeping purposes, in contravention of Section 72 Public Health Act, 1925. Two of the occupiers promptly removed the beds. The third, after repeated cautions, was summoned and fined 2/6. He shortly after removed into a proper bakehouse.

Restaurant Kitchens (which include hotels, cafés, and dining rooms). The number on the Register is now 117. They are regularly inspected, and in no case was it found necessary to serve a notice, a few minor contraventions being dealt with at the Inspector's visit.

Fried Fish Shops.—The number of these is 156 (as for the previous year). For comments see “Offensive Trades” (Section VI).

Ice Cream Manufactories and Retail Shops.—36 applications were received during the year for permission to make and/or sell this commodity. 22 were refused, the general sanitary conditions of the premises not being up to the standard.

The number of manufactories has been decreased from 130 in 1928 to 117 in 1929, and the number of retailers from 192 to 178.

The premises of both manufacturers and retailers are regularly inspected. In the case of manufacturers, they are advised that the persons actually engaged in making the ice cream be supplied with white washable overalls, which is done in many cases. Unfortunately, however, under the existing law, this cannot be insisted upon.

In one instance it was found that ice-cream was being sold from a barrow which did not bear the owner's name and address, as required by Section 52 (4) of the Newcastle Corporation Act, 1911. As repeated cautions were ineffectual, the owner was summoned and was fined 5/-.

The Milk and Dairies (Amendment) Act, 1922, Sec. 2; and The Milk and Dairies Order, 1926, Sec. 6.—During the year 25 applications were received for permission to retail milk, 16 being granted and 9 refused on sanitary grounds. At the close of the year there were 650 retail milk-shops in the City, including 61 belonging to 10 large dairy companies. Of the total, 66 were shops in which only dairy products and like commodities were retailed, 267 were shops selling other articles, and 42 were hawkers. The last-named type of milk dealer is not now registered. During the year 6 applications for registration were received from intending hawkers, but

Samples taken for Analysis during the Year 1929.

ARTICLE	No. of Samples obtained.			Result of Analysis.			Action taken.				REMARKS.
	Formal.	Informal.	Total.	Genuine.	Not Genuine.	Doubtful.	Prosecutions.	Convictions.	Cases Dismissed.	Cases Withdrawn.	
New Milk	773	12	785	763	22	..	11	11	..	..	In one case (1 of a series of 6 "appeal to cow" samples—the others being genuine) no proceedings were taken, and in the remaining 10 (of the 22 samples "not genuine") the vendors were cautioned by order of the Health Committee.
Condensed Milk (including "Evaporated" Milk)	..	9	9	8	..	1	..	..	..	..
Cream	12	12	12	..	..	..	..	..	..	The sample classified as "doubtful" contained compounds of tin and copper. This was obtained in consequence of complaints as to "bad taste" of the milk as supplied to an Institution in the City. The matter was taken up with the contractor by the Medical Officer of Health.
Butter	22	22	22	..	..	..	..	..	..
Margarine	22	22	22	..	..	..	..	..	..
Coffee and "Coffee Essence"	7	7	7	..	..	..	..	..	..
Cocoa	1	1	1	..	..	..	..	..	..
Tea	6	6	6	..	..	..	..	..	..
Sugar	6	6	6	..	..	..	..	..	..
Baking Powder	3	3	3	..	..	..	..	..	..
Custard Powder	5	5	5	..	..	..	..	..	..
Egg Powder	3	3	3	..	..	..	..	..	..
Flour (including self-raising flour)	..	4	4	4	..	..	..	..	..	..
Wholemeal and Oatmeal	2	2	2	..	..	..	..	..	..
Yeast	6	6	6	..	..	..	..	..	..
Barley	3	1	4	4	..	..	..	..	..	..
Rice	2	2	2	..	..	..	..	..	..	The sample "not genuine" was an informal one of "Sago," which was found to consist entirely of Tapioca. This was submitted for informative purposes only—not for proceedings.
Ground Rice, Semolina, Vermicelli, Farola, Sago, Tapioca, and Arrowroot	..	8	8	7	1	..	..	..	..	..
Corn Flour	6	6	6	..	..	..	..	..	..
Pepper	1	1	1	..	..	..	..	..	..
Mustard	1	1	1	..	..	..	..	..	..
Vinegar	1	1	2	2	..	..	..	..	..	..
Sauce and Pickles	5	5	5	..	..	..	..	..	..
Curry Powder	1	1	1	..	..	..	..	..	..
Herbs (Seasoning)	2	2	2	..	..	..	..	..	..
Cocoanut	1	1	1	..	..	..	..	..	..
Ground Ginger	1	1	1	..	..	..	..	..	..
Ground Almonds and Essence of Almonds	..	3	3	3	..	..	..	..	..	..
Lard	8	8	8	..	..	..	..	..	..
Bacon	1	1	1	..	..	..	..	..	..
Cheese	1	1	1	..	..	..	..	..	..
Sausage (including Sausage Meat and Mince Meat)	7	45	52	47	5	..	2	2	..	..
Tripe	7	7	7	..	..	..	..	..	..
Meat Pastes	2	2	2	..	..	..	..	..	..
Peas and Beans	7	7	7	..	..	..	..	..	..
Jams, Jellies and Marmalade ..	2	12	14	10	4	..	2	..	..	2	
Tinned Fish (Salmon and Brisling)	..	3	3	3	..	..	..	..	..	..
Lemonade Powder	1	1	1	..	..	..	..	..	..
Sponge Cake	1	1	1	..	..	..	..	..	..
Dried Fruits (Raisins, Currants, Prunes, and Mixed Fruits)	..	33	33	33	..	..	..	..	..	..
Preserved Fruits (Glacé Cherries)	..	3	3	3	..	..	..	..	..	..
Candied Peel	15	15	15	..	..	..	..	..	..
Fresh Fruit	11	11	11	..	..	..	..	..	..
Tinned Fruit (including Tomatoes)	1	5	6	6	..	..	..	..	..	..
Table Jelly and Gelatine	9	9	9	..	..	..	..	..	..
Tincture of Rhubarb	4	4	4	..	..	..	..	..	..
Syrup of Rhubarb	3	3	3	..	..	..	..	..	..
Castor Oil and Syrup of Rhubarb	..	1	1	1	..	..	..	..	..	..
Castor Oil	6	6	6	..	..	..	..	..	..
Olive Oil	4	4	4	..	..	..	..	..	..
Camphorated Oil	1	5	6	4	2	..	..	..	..	..	The samples "not genuine" were each deficient in camphor to the extent of 10 per cent., the first being taken informally and the second formally, from the same vendor, who was cautioned by order of the Health Committee.
Glycerine	4	4	4	..	..	..	..	..	..
Comp. Syrup of Figs	3	3	3	..	..	..	..	..	..
Glycerine, Lemon and Ipecacuanha Mixture	..	1	1	1	..	..	..	..	..	..
Blackcurrant, Honey, and Aniseed Balsam	..	1	1	1	..	..	..	..	..	..
Cod Liver Oil Capsules	1	1	1	..	..	..	..	..	..
Glauber's Salts	1	1	1	..	..	..	..	..	..
Seidlitz Powders	2	2	2	..	..	..	..	..	..
Gregory Powder	3	3	3	..	..	..	..	..	..
Cream of Tartar	2	2	2	..	..	..	..	..	..
Rum and Coffee	1	1	2	..	..	2	..	..	..	..	The samples classified as "doubtful," obtained informally and formally, respectively, from one vendor, contained very little alcohol (not more than 1 per cent. of Rum). The manufacturer's attention was drawn to the matter and to the misdescription of the substance referred to.
Rum	1	5	6	4	2	..	..	..	..	..
Whiskey	4	8	12	5	7	..	2	1	1	..	In 3 cases (informal samples) no proceedings were taken, and in the remaining 2 of the samples "not genuine" the vendors were cautioned by the order of the Health Committee.
Beer	4	4	4	..	..	..	..	..	..
Wines	2	2	2	..	..	..	..	..	..
TOTALS	794	378	† 1172	1126	43	3	17	14	1	2	Amount of Penalties obtained—£37 10s. 0d.*

† Includes 66 samples taken "in course of delivery" (at railway stations, hospitals, etc.).
* Total penalties—£44 10s. 0d., including those in respect of "Offences other than Adulteration," etc., (£7, see separate table, p. 230).

all were refused. It is ultimately intended to remove those at present on the Register, as they are a continual source of trouble to the Department, and certainly no credit to the trade. Much might be done by the wholesale dairymen by refusing to sell milk to them and ceasing to lend or store their milk cans. The remaining 275 shops sold a sterilised milk in stoppered bottles.

C. RAIMES,

*Inspector under the Sale of
Food and Drugs Acts, etc.*

*Health Department,
Town Hall,
30th June, 1930*

REPORT OF THE
CHIEF SANITARY INSPECTOR.

VI.—THE HOME AND THE
WORKSHOP.

NUISANCES, HOUSING, FACTORIES AND
WORKSHOPS, Etc.

NUISANCES, HOUSING, FACTORIES AND WORKSHOPS, ETC.

The following is the Report of the Chief Sanitary Inspector.

TO THE MEDICAL OFFICER OF HEALTH.

SIR,

I have pleasure in submitting the following report on the work carried out in my Section of the Department during the year ended December 31st, 1929.

NUISANCES.

The number of nuisances reported upon and dealt with during the year was 12,096—a decrease of 979 as compared with last year. As usual, they were of a most varied nature. Complaints received included dogs barking, cock crowing, gramophone playing, and other nuisances of a similar kind, which cannot be dealt with under the laws relating to Public Health, and consequently no action could be taken.

It is satisfactory to report a decrease in the number of choked drains and water closets.

Overcrowding.

Overcrowding still continues to a very serious extent, and unfortunately shows few signs of abating. The many excellent housing schemes carried out by the Corporation do not to any great extent affect the persons who are living under overcrowded conditions. Lack of employment and inability to pay high rents are the main factors in overcrowding. The great need is for houses

in flats of two, three, or four rooms, which can be let at rentals which the man with the small income can pay ; the two-room flats to be occupied only by married couples without children, or by single persons.

Notices Served.

The following are the numbers of notices and letters issued during the year :—

Total number of notices served :—

Informal	5,579	
Statutory	761	
	—	6,340
Number of letters sent		2,556
Number of circular letters sent		1,875
		—
Total		10,771
		—

Magisterial Proceedings.

Considering the total number of letters sent out and notices served (10,771), it is worthy of note that it was only necessary to take legal proceedings in 69 cases. In the remaining instances in which proceedings were ordered by the Health Committee, the necessary work was carried out without the issue of summonses. For details see page 253.

The Rent and Mortgage Interest (Restrictions) Acts.

Only three applications were received this year from tenants for certificates that their houses were not “in all respects reasonably fit for human habitation” or otherwise “not in a reasonable state of repair.” After inspection of the premises certificates were granted in two cases, the necessary works being eventually carried out by the owners. In the third instance the requisite repairs, which were already in hand, were completed without the certificate having to be issued.

Conversion of Dry Closets to Water Closets.

This important work still goes on, and it is a source of great satisfaction that so much was accomplished. In one case only was it necessary to take legal proceedings. In this instance the owner, on receiving statutory notice to convert 4 pail closets to water closets, provided new pails, and carried out other structural repairs to the closets, claiming that they were then “sufficient” within the meaning of Sec. 36, Public Health Act, 1875. The case was strenuously defended. Lengthy arguments ensued on both sides as to whether the magistrates could enter into the question of the “sufficiency” of the existing closets, or whether the decision of the Local Authority was final, and also as to the validity of Sec. 53. Newcastle Improvement Act, 1892, which gives power to proceed for penalty instead of the Local Authority doing the work and recovering the expenses, as provided for in Sec. 36, Public Health Act, 1875. Eventually the Magistrates decided to convict, and imposed a penalty of 10/- in each of the four cases. The result of this case will greatly facilitate the removal of such conveniences.

The number converted in 1929 was 392 (against 493 in 1928), and of this number 298 were pail closets, and 94 “cell” privies. 54 “dry” ashpits were also removed and replaced by portable dustbins. In connection with these conversions, 468 dust-bins were supplied by the Corporation, and delivered at the houses free of cost.

As in previous years, a circular letter, giving an abstract of Sec. 21 Public Health Acts (Amendment) Act, 1890, which provides that any person improperly fouling or damaging any water closet shall be liable to a penalty of 10/-, is given to each tenant. That this has proved

of great value will be seen from the number of choked water closets and drains, which has considerably decreased.

RETURN OF " DRY " CLOSETS IN THE VARIOUS WARDS OF THE CITY

WARDS.	Total No. Privies.	Pail Closets.	Cell Privies.	Privies and Ashpits.	
				Privies.	Ashpits.
St. Nicholas' .....	..	..	..	..	..
St. Thomas'	6	5	..	1	1
St. John's .....	..	..	..	..	..
Stephenson .....	..	..	..	..	..
Armstrong .....	..	..	..	..	..
Elswick	29	29	..	..	..
Westgate	2	2	..	..	..
Arthur's Hill .....	..	..	..	..	..
Benwell	4	..	3	1	1
Fenham	29	14	5	10	5
All Saints'	5	5	..	..	..
St. Andrew's	6	6	..	..	..
Jesmond .....	..	..	..	..	..
Dene .....	..	..	..	..	..
Heaton	2	2	..	..	..
Byker	333	333	..	..	..
St. Lawrence	500	498	..	2	2
St. Anthony's	90	90	..	..	..
Walker	69	4	36	29	16
Total in City	1,075	988	44	43	25

Smoke Abatement.

During the year it was found necessary to serve four statutory notices (as compared with two in 1928), under the Public Health (Smoke Abatement) Act, 1926. These resulted in smoke-preventing apparatus being installed in three cases, and a "grit preventer," together with a better class of coal, in the fourth. From observations frequently made, there has been no cause of complaint since these improvements were made.

On four occasions dense black smoke was found to be given off by steam road wagons. The owners were communicated with, and in three cases which have been observed since a very great improvement was found; the fourth has not been seen in the locality since.

Although there are no byelaws as to smoke as yet, the time suggested in the model issued by the Ministry of Health, viz., 2 minutes per half-hour, is taken as a standard.

The following table gives details as to smoke inspection :—

No. of chimneys watched.	No. of observations made.	No. of chimneys from which black smoke issued in such quantity as to be a nuisance.	No. of times when smoke issued so as to be a nuisance.	No. of notices served for the abatement of smoke nuisances.		No. of Prosecutions.
				Informal.	Statutory	
126	563	12	22	50*	4	..

* Includes communications sent in respect of excessive "medium" smoke.

Smoke from Allotments.—Complaints were received, and were confirmed by observations made by the District Inspector, as to volumes of pungent smoke given off by the burning of vegetable refuse in allotments. A circular letter was addressed to the secretary of each association, drawing attention to this. This is a difficult matter to deal with, but in the result the nuisance has been considerably reduced, and no further complaints have been received.

Atmospheric Pollution Records.—Three observation stations, under the immediate control of the City Analyst, are placed—one in Westgate Cemetery, one in the grounds of the Moor Hospital, and one in St. Lawrence area, in connection with similar stations in other towns, the monthly results from all of which are compared and published by the Department of Scientific and Industrial Research.

The monthly readings from the Newcastle stations are appended :—

ATMOSPHERIC POLLUTION.—NEWCASTLE RECORDS, 1929.

TOWN MOOR.

MONTH.	RAIN (Millimetres).	METRIC TONS OF DEPOSIT PER SQUARE KILOMETRE PER MONTH.									
		Insoluble Matter.			Soluble Matter.		TOTAL SOLIDS.	Included in Soluble Matter.			
		Tar.	Other Car-bonaceous.	Ash.	Loss on Ignition.	Ash.		Sulphate as S.O ₃ .	Chlorine as Cl.	Ammonia as N.H ₃ .	Sulphate as S.O ₄ .
January .	85.2	0.03	1.59	1.31	3.07	3.41	9.41	2.22	0.81	0.13	2.66
February	27.0	0.04	1.89	2.00	2.00	2.58	8.51	1.66	0.70	0.01	1.99
March ...	15.6	0.03	1.38	1.57	1.25	2.09	6.32	1.09	0.24	0.03	1.31
April	56.8	0.17	1.42	1.90	2.73	2.04	8.26	1.21	0.54	0.14	1.45
May	31.2	0.01	1.59	1.68	1.19	1.50	5.97	0.77	0.17	0.03	0.92
June	56.8	0.13	1.63	1.86	1.48	1.02	6.12	1.16	0.33	0.06	1.39
July	83.8	0.01	2.14	2.59	2.51	2.86	10.11	1.26	0.41	0.06	1.51
August ..	126.4	0.03	2.44	1.51	1.76	4.30	10.04	1.65	0.36	0.13	1.97
Sept.	28.4	0.26	2.98	3.18	1.42	2.21	10.05	0.95	0.20	0.03	1.14
Oct.	68.2	0.01	0.88	1.48	1.12	2.46	5.95	1.31	0.38	0.06	1.56
Nov.	71.0	0.13	0.89	1.68	2.13	3.98	8.81	2.05	0.36	0.06	2.46
Dec.	99.4	0.14	1.82	1.83	2.98	3.38	10.15	2.05	0.71	0.06	2.46
Total, 12 months .	749.8	0.99	20.65	22.59	23.64	31.83	99.70	17.38	5.21	0.80	20.82
Average per month	62.5	0.08	1.72	1.88	1.97	2.65	8.30	1.45	0.43	0.07	1.74

An average of 8.30 metric tons per square kilometre per month = 7.9 cwts. per acre per annum, or 254 tons per square mile per annum, as compared with 8.4 cwts. per acre, or 269 tons per square mile in 1928.

WESTGATE CEMETERY.

MONTH.	RAIN (Millimetres).	METRIC TONS OF DEPOSIT PER SQUARE KILOMETRE PER MONTH.									
		Insoluble Matter.			Soluble Matter.		TOTAL SOLIDS.	Included in Soluble Matter.			
		Tar.	Other Car- bonaceous.	Ash.	Loss on Ignition.	Ash.		Sulphate as S.O ₃ .	Chlorine as Cl.	Ammonia as N.H ₃ .	Sulphate as S.O ₄ .
January .	83.4	0.14	4.80	3.39	3.50	5.17	17.00	3.54	0.71	0.18	4.25
February	27.8	0.46	4.59	3.85	4.28	4.84	18.02	2.10	0.86	0.03	2.52
March ...	16.7	0.13	3.47	4.04	1.36	2.50	11.50	1.39	0.24	0.06	1.67
April	51.4	0.44	5.98	6.56	2.06	5.45	20.49	3.07	0.53	0.18	3.68
May	26.4	0.10	8.59	9.52	1.17	2.53	21.91	1.21	0.25	0.03	1.45
June ...	54.2	0.26	3.00	4.19	2.49	2.28	12.22	1.93	0.39	0.08	2.32
July	75.1	0.14	3.56	4.77	3.15	3.60	15.22	2.00	0.37	0.04	2.42
August ..	73.7	0.14	3.42	3.47	1.32	2.21	10.56	1.06	0.32	0.04	1.26
Sept.	29.2	0.31	3.14	4.25	1.57	2.22	11.49	1.35	1.18	0.03	1.61
Oct.	62.5	0.25	2.60	3.21	2.88	3.75	12.69	2.36	0.49	0.07	2.83
Nov.	69.5	0.28	2.95	3.11	3.89	5.84	16.07	3.43	0.39	0.07	4.11
Dec.	83.4	0.19	2.95	2.92	7.17	3.34	16.57	5.14	0.60	0.07	6.17
Total, 12 months .	653.3	2.84	49.05	53.28	34.84	43.73	183.74	28.58	6.33	0.88	34.29
Average per month	54.4	0.24	4.09	4.44	2.90	3.64	15.31	2.38	0.53	0.07	2.86

An average of 15.31 metric tons per square kilometre per month = 14.6 cwts. per acre per annum, or 468 tons per square mile per annum, as compared with 13.9 cwts. per acre, or 446 tons per square mile in 1928.

ST. LAWRENCE.

MONTH.	RAIN (Millimetres).	METRIC TONS OF DEPOSIT PER SQUARE KILOMETRE PER MONTH.									
		Insoluble Matter.			Soluble Matter.		TOTAL SOLIDS.	Included in Soluble Matter.			
		Tar.	Other Car-bonaceous.	Ash.	Loss on Ignition.	Ash.		Sulphate as S.O_3 .	Chlorine as Cl.	Ammonia as N.H_3 .	Sulphate as S.O_4 .
January .	82.0	0.01	2.62	3.53	3.61	1.96	11.73	1.74	0.73	0.13	2.09
February	16.9	0.04	1.60	4.83	1.35	2.92	10.74	1.04	0.81	0.01	1.25
March ...	11.7	0.04	3.20	6.13	1.12	2.95	13.44	1.22	0.42	0.03	1.47
April	36.5	0.13	2.10	4.40	1.90	2.19	10.72	1.08	0.53	0.14	1.30
May	20.8	0.03	1.52	2.89	0.74	1.80	6.98	0.72	0.26	0.01	0.86
June	37.8	0.42	2.04	4.39	1.29	2.11	10.25	1.12	0.43	0.04	1.34
July	56.0	0.09	2.47	4.48	1.34	3.14	11.52	1.15	0.27	0.03	1.38
August ..	65.1	0.12	2.23	4.42	0.39	3.51	10.67	1.38	0.42	0.04	1.65
Sept.	22.1	0.23	2.04	4.87	1.07	2.92	11.13	1.08	0.73	0.01	1.30
Oct.	52.1	0.21	1.28	3.16	0.42	3.54	8.61	1.21	0.52	0.04	1.46
Nov.	52.1	0.08	1.90	7.02	1.56	3.85	14.41	1.68	0.56	0.05	2.02
Dec.	78.1	0.23	1.86	4.32	1.72	5.00	13.13	2.13	1.22	0.08	2.56
Total 12 months .	531.2	1.63	24.86	54.44	16.51	35.89	133.33	15.55	6.90	0.61	18.68
Average per month	44.3	0.14	2.07	4.54	1.37	2.99	11.11	1.30	0.57	.005	1.56

An average of 11.11 metric tons per square kilometre per month = 10.6 cwts. per acre per annum, or 340 tons per square mile per annum. This is the first year this gauge has been in operation.

TOTAL IN THREE GAUGES IN THE CITY.

MONTH.	RAIN (Millimetres).	METRIC TONS OF DEPOSIT PER SQUARE KILOMETRE PER MONTH.									
		Insoluble Matter.			Soluble Matter.		TOTAL SOLIDS.	Included in Soluble Matter.			
		Tar.	Other Carbonaceous.	Ash.	Loss on Ignition.	Ash.		Sulphate as $S.O_3$.	Chlorine as Cl.	Ammonia as $N.H_3$.	Sulphate as $S.O_4$.
Total, 12 months .	1934.3	5.46	94.56	130.31	74.99	111.45	416.77	61.51	18.44	2.29	73.79
Average per month	161.2	0.45	7.88	10.86	6.25	9.29	34.73	5.13	1.54	0.19	6.15
Average per gauge 12 months	644.8	1.82	31.52	43.44	24.99	37.15	138.92	20.50	6.15	0.76	24.60
Average per gauge per month	53.7	0.15	2.63	3.62	2.08	3.10	11.58	1.71	0.51	0.06	2.05

An average of 11.58 metric tons per square kilometre per month = 11 cwts. per acre per annum, or 354 tons per square mile, as compared with 16.2 cwts. per acre or 518 tons per square mile in 1928. It should be noted, however, that the figures for 1928 include those for the gauge at City Road, which was substituted at the beginning of 1929 by that at St. Lawrence.

For comparison with the foregoing, the following returns of sunshine recorded at the Armstrong College, Newcastle, and at Cockle Park, near Morpeth (about 15 miles from the City), are given :—

Month.	Armstrong College. Sunshine (hours).	Cockle Park. Sunshine (hours).
January	20·0	33·8
February	18·3	35·7
March	101·7	177·9
April	144·6	159·6
May	168·3	205·6
June	156·6	197·5
July	149·8	176·5
August	136·1	157·4
September	128·4	162·7
October	103·2	123·7
November.....	53·4	76·8
December	30·9	58·9
Total for year	1211·3	1566·1
Average per month	100·9	130·5

CINEMAS, THEATRES, AND OTHER PLACES OF PUBLIC ENTERTAINMENT.

One new cinema has been opened during the year, making a total of 6 theatres and music halls and 30 cinemas, in addition to 96 other places such as dance and concert halls, billiard rooms, cafés, etc., for which licences are required.

Eight applications for certificates of sanitation, which are required by the Licensing Justices before a licence is granted or renewed, were considered. All were granted—one being for the Festival Hall in connection with the North East Coast Exhibition, which, of course, ceased to be so used on the termination of the Exhibition in October.

The testing of the ventilation and heating of all such places has again been systematically carried out, 72 day visits and 44 night visits being made for the inspection of sanitary arrangements and dressing rooms, and for testing purposes.

As in previous years, the ventilation was tested by the "Kata" thermometer in 35 places. In several from three to five separate tests were made, or a total of 78. The improvement reported last year still continues. In 1928, of 35 buildings tested, 22 reached the required standard, and were termed "first class," the "second class" being 13. This year 27 fulfilled the conditions for first class and 8 for second class. These compare favourably with results obtained in other towns which your Chief Inspector has had the opportunity of seeing.

In no case was it necessary to draw the attention of the management to any contraventions in the dressing room arrangements or in regard to the heating and ventilation of the halls.

OFFENSIVE TRADES.

Fried Fish Shops still predominate in the registered offensive trades, as they do in all large towns. At present there are 156, as in 1928. This gives one such business to every 1,817 head of population in the city. They were regularly visited, both by day and night. In five cases it was necessary to serve notices to cleanse the premises, and in nine, to carry out other minor alterations or improvements. All were duly complied with, without any necessity for further action.

During the year a personal inspection of the oldest shops, with their somewhat obsolete coal-fired ranges, was made, with a view of inducing the occupiers to replace the latter with more modern gas-fired apparatus. This, however, met with no success, the general excuse put forward being that trade was too bad to allow this to be done; also that coal-fired ranges were the most economical. There, however, seems to be a diversity of

opinion about this, many of the principal fryers holding that gas is much to be preferred, and that on no consideration would they go back to coal fires.

Other Trades.—The total number of offensive trades now carried on in the City is 195, as in 1928.

This represents an increase of 1 tripe boiler and a decrease of 1 rag and bone dealer, the other trades remaining as previously.

The number now on the register is :—

Rag and Bone Dealers.....	15
Dealers in Hides and Skins.....	4
Dealers in Blood or other putrescible animal products	1
Fat Melters or Extractors.....	3
Glue and Size Makers.....	2
Gut Scrapers	1
Fish Fryers	156
Bone Boilers	5
Soap Boilers	1
Tripe Boilers	7

SUMMARY OF NUISANCES, ETC., FOR THE ABATEMENT OF WHICH NOTICES
WERE SERVED DURING 1929.

Defective "cell" privies in Walker and Benwell (to replace with water-closets).....	56
Foul pail-closets (to replace with water-closets).....	322
Foul privy and ashpit (to replace with water closet)	1
Defective waste water-closets (to replace with fresh water-closets with flushing cisterns, etc.)	11
Foul or defective ashpits not connected with privies (to remove and provide dust bins)	63
Insufficient water-closet or privy accommodation (additional water-closets ordered)	10
Defective or insufficient dust bins (for houses)	1,562
" " (for business premises).....	265
Defective water-closets	829
Defective pail-closets (to repair, provide new pails, etc.).....	13
Water-closets without water supply	178
Choked water-closets (mostly served on tenants).....	42
Dirty water-closets (all served on tenants)	27
Defective drains (to repair, or construct new drains).....	144
Insufficient means of drainage.....	3
Choked drains, etc.	402
Defective, want of, or choked sinks, waste pipes, etc.....	305
Defective or choked soil-pipes, vent shafts, etc.....	30
Sink waste-pipes not trapped	15
Want of or defective pavement in yards, passages, etc.....	233
Dirty rooms	52
Damp rooms	157
Overcrowding	16
Dirty yards, passages, stairs, etc.	117
Animals, pigeons, and fowls improperly kept	39
Offensive accumulations	75
Accumulations of manure	19
Want of or defective manure pits	6
Broken roofs and want of or defective or choked spouting	1,012
Want of water (other than in tenements—see below).....	273
Smoke nuisances	16
Want of proper ventilation to rooms (including to floor space), broken window cords, etc.....	514
Rooms inadequately lighted	1
Structural defects—internal and external—(broken plaster, floors, stairs, walls, fireplaces, etc.).....	2,257
Cisterns supplying water to sinks, etc., dirty or defective.....	7
Filth thrown on yards, streets, into dustbins, etc.....	7
Stables (unsuitable, defective, dirty, etc.).....	9
Food manufactured or stored for sale under improper conditions.....	16
Bakehouses—Dirty, etc.	79
Council (and other) Schools—Drain choked	1
Water closets choked	1
Smoke from boiler chimney.....	1
Condemned rooms (cellar dwellings) illegally occupied.....	2
Fried fish shops—(Want of cleansing)	5
" (Other defects and contraventions).....	9
Tenements—Limewashing not done	92
No adequate accommodation for washing of clothes.....	183
" " storage of food.....	1,345
" " preparation and cooking of food	135
Water supply and sinks not adequate, conveniently accessible, etc.	442
Water supply (only) not adequate, conveniently accessible, etc.	139
Insufficient number of water-closets provided	52
Water closets not conveniently accessible.....	3

SUMMARY OF NUISANCES, ETC.—*Continued*

TENEMENTS—continued.			
Inadequate lighting of common staircases—Natural	61	}	263
Artificial	202		
Staircases without proper handrails, etc.			79
Offensive trade established without consent (tripe boiling)			1
Smells from tripery			1
Rag Store—Rags deposited in front of premises			1
Ice cream—Vendor's name and address not inscribed upon his barrow .			1
Quarry (Fencing) Act—Fence broken and dangerous			1
Unclassified minor nuisances			156
TOTAL			12,096

DETAILS RELATING TO CERTAIN WORKS CARRIED OUT IN THE ABATEMENT OF
NUISANCES AND TO INSPECTIONS MADE DURING 1929.

Length (in yards) of old drains removed	993
Length (in yards) of new drains constructed	2,368
New trapped gullies provided to drains	312
" Cell " privies removed (in Walker)	94
Pail-closets removed	298
Defective water-closets removed	60
Water-closets provided (in place of the foregoing privies and defective water-closets removed, also in 39 cases where the accommodation was previously insufficient)	484
Dry ash-pits removed and replaced by galvanised iron dust bins....	54
Dust bins substituted for dry ash-pits where water-closets existed, and provided in cases where privies have been replaced by water-closets	‡468
No. of drains tested	753
No. of tests of above drains made by smoke and water	785
No. of inspections from complaints made at office (verbally or by letter)	2,984
No. of tenement inspections made	15,913
No. of contraventions of Tenement Bye-laws for which notices have been served to obtain remedy	3,764
Inspections of houses made from complaints received outdoors or nuisances discovered in the districts, including a large number of minor nuisances, such as choked drains and dirty yards, the abatement of which was accomplished at the time of visit, and without legal notice	4,934
Inspections to learn if works ordered were in progress	16,214
Supervisions of work in progress	7,288
Common yards and courts in the worst localities specially visited on Friday afternoons and Saturday mornings to obtain weekly cleansing	22,875
Inspections after infectious disease	845
Inspections of milk shops and ice creameries (including retail shops)	1,316
„ bakehouses	†1,341
„ offensive trades	1,387
„ wholesale margarine warehouses	41
„ as to limewashing of tenements	2,448
„ of schools	117
„ under Housing Act	2,348
Inspection of Cinemas, etc. (day visits, 72 ; night visits, 44)	116
Tents, Vans, Sheds and similar structures	1,323
Miscellaneous Visits	9,279

‡ Dust bins supplied free by Corporation.

† Including 985 inspections made under the Factory and Workshop Acts by the Assistant Inspectors of Workshops.

SUMMARY OF LEGAL PROCEEDINGS ORDERED TO BE TAKEN BEFORE THE
MAGISTRATES FOR THE ABATEMENT OF NUISANCES, ETC.,
DURING THE YEAR 1929.

NATURE OF COMPLAINT.	No of Cases.	Work done and Nuisances abated without the Summonses being applied for.	Summonses issued.	
			Work done and Summonses withdrawn.	Other Results.
<i>Public Health Acts :—</i>				
Roofs defective and spouting choked and/or defective	27	19	7	In one instance work ordered by Magistrate to be done in 14 days.
Window sash-cords broken (preventing efficient ventilation)	3	2	1	
Yard pavement defective	2	2	..	Work ordered by Magistrates to be done in 14 days.
Offensive accumulations .	3	3	..	
Drains defective	3	2	1	
Brickwork of scullery set-pot and flue defective ..	1	..	..
Cupboard floor defective, causing draughts	1	..	1	
Chimney pot off and stack dilapidated	1	..	1	
Sink waste-pipes defective, untrapped, etc. ..	2	1	1	
Other Nuisances	10	10	..	
<i>Public Health Act, 1875, Sec. 94, and Public Health (Smoke Abatement) Act, 1926, Sec. 1 :—</i>				
Emission of grit from laundry chimney	2	2	..	
<i>Public Health Act, 1875, Sec. 36, and Newcastle upon Tyne Improvement Act, 1892, Sec. 53 :—</i>				
Foul privies (to be replaced by waterclosets)	24	19	1	In 4 instances (one owner) fined 10s. in each case.
Foul ashpits (to be replaced by portable dustbins)	1	..	1	
Water closets defective ..	6	4	1	In 1 case fined 20s.
Carried forward..	86	64	15	7

SUMMARY OF LEGAL PROCEEDINGS ORDERED TO BE TAKEN BEFORE THE
MAGISTRATES FOR THE ABATEMENT OF NUISANCES, ETC.,
DURING THE YEAR 1929.—*continued.*

NATURE OF COMPLAINT.	No. of Cases.	Work done and Nuisances abated without the Summonses being applied for.	Summonses Issued.	
			Work done and Summonses withdrawn.	Other Results.
Brought forward..	86	64	15	7
<i>Newcastle upon Tyne Corporation Act, 1911, Sec. 55 :—</i>				
Want of or defective dustbins for house refuse ..	10	6	4	
<i>Public Health Acts Amendment Act, 1890, Sec. 22 :—</i>				
Only 1 water closet for both sexes of persons employed	1	1	..	
<i>Newcastle upon Tyne Corporation Act, 1911, Sec. 52 (4) :—</i>				
Name and address of vendor not inscribed on ice cream barrow	1	..	..	Fined 5s.
<i>Public Health Act, 1925, Sec. 72 :—</i>				
Bread prepared for sale in a sleeping apartment ..	1	..	..	Fined 2s. 6d.
<i>Bye-laws with respect to Tenemented Houses :—</i>				
Water closet accommodation (insufficient, not conveniently accessible, etc. (No. 8)	3	2	1	
Water closet structure, apparatus, and means of drainage not maintained in good order (No. 11).	5	3	1	In one instance fined 10s.
Common staircase not kept in proper repair (No. 18, a).	1	1	..	
Carried forward..	108	77	21	10

SUMMARY OF LEGAL PROCEEDINGS ORDERED TO BE TAKEN BEFORE THE
MAGISTRATES FOR THE ABATEMENT OF NUISANCES, ETC.,
DURING THE YEAR 1929.—*continued.*

NATURE OF COMPLAINT.	No. of Cases.	Work done and Nuisances abated without the Summonses being applied for.	Summonses Issued.	
			Work done and Summonses withdrawn.	Other Results.
Brought forward..	108	77	21	10
<i>Bye-laws with respect to Tenemented Houses—con.)—</i>				
Common staircases without adequate means of (a) natural light (No. 18, b)	11	9	2	
(b) Artificial light (No. 18, c)	40	35	3	In each of 2 cases fined 10s.
Rooms inadequately ventilated (No. 26, c.)	13	10	3	
Staircases without sufficient handrails (No. 20)	1	..	1	
Inadequate accommodation for—				
(a) Washing of clothes (No. 28, f.i.)	32	20	9	In each of 3 cases fined 20s.
(b) Storage of food (No. 28, f.ii.) ...	34	28	6	
(c) Preparation and cooking of food (No. 28, f.iii.)	3	2	1	
Water supplies and sinks inadequate, not conveniently accessible, etc. (No. 28, d.).....	37	34	3	
Houses not throughout of adequate stability (structural defects, including roofs, floors, stairs, plaster, etc.) (No. 28, g.)	11	8	2	In 1 instance fined 10s.
Yard pavement not in proper repair (No. 28, c.)	7	5	..	In each of 2 cases fined 10s.
Totals	297	228	51	18. Amount of penalties— £9 7s. 6d.

HOUSING.

That the problem of finding houses is little less acute than in previous years is shown by the following return :—

CITY ENGINEER'S CENSUS OF UNOCCUPIED HOUSES.

Class of House.	Nov., 1912	Aug., 1914	Nov., 1918	Nov., 1922	Nov., 1925	Nov., 1926	Nov., 1927	Nov., 1928	Nov., 1929
Self-contained	306	137	29	93	105	179	215	222	205
Flats (each Flat counted as a separate dwelling).	903	75	..	35	15	41	55	34	52
House and Shop combined	68	29	2	9	6	27	18	28	20
Tenemented Houses	28	3	..	..	..	1	..	..	..
Total	1,305	244	31	137	126	248	288	284	277

Effect of Bad Housing.—Reference has already been made to the effect of bad housing and overcrowding upon the public health. It is of interest to summarise some of the points. Speaking generally, the wards with the highest populations per acre have also the highest death rates. The converse does not always hold, as some wards, such as Walker, may have small densely-packed areas scattered about among wide stretches of open space or farm land. The rates in these will be relatively high. But where the dwellings are evenly distributed and in good sanitary condition, and the population on area is low, the death rate is also low.

Thus the death rates from all causes are high in St. Andrew's Ward (19·2), All Saints' (18·0), St. John's (16·1), and low in Heaton (9·7), Dene Ward (10·5), Fenham (10·7), which occupy respectively also opposite ends of the scale in regard to quality of housing, and density of population (see tables on pages 53 and 60).

Similarly infantile mortality generally follows the same rule, and the wards with the highest wastage of child life are again among the most crowded ones. Thus All Saints' Ward has an infantile rate of 140 deaths per 1,000 births, St. John's, 112, and St. Lawrence and Armstrong 105, as compared with rates of 37 and 49 in Jesmond and Heaton Wards respectively. Over a period of twenty-two years, the deaths per 1,000 births in one room, two room, and three room houses have been respectively 127, 115, and 96, and in the year under report were 95, 90, and 87.

In the case of tuberculosis one sees again the influence of congestion and bad houses in the fact that the highest mortalities for the year were in All Saints' (2·36), St. Lawrence (2·21), St. Andrew's (1·89), while the lowest occurred in Heaton (0·52), Dene (0·69), and St. Thomas' (0·73). The tuberculosis death rate for the whole City in 1929 was 1·35 per 1,000 population. Again, about 34 per cent. of the population live in one and two room houses, yet over 39 per cent. of the deaths from consumption were among these.

The Housing Act, 1925.

During the year 2,348 inspections were made under this Act. Difficulty is still experienced in obtaining compliance with notices. A great impetus would be given to this work if the Committee in some cases carried out the necessary repairs in default of the owner, as provided for by the Act. If housing conditions were normal, and closing orders could be made in some cases, it would no doubt have a most salutary effect in inducing owners to keep their houses in a reasonable state of repair.

During the year three houses were closed, and since demolished by the owners. A notice was served upon the owners under Section 3 to make the houses “in all respects reasonably fit for human habitation.” Their solicitors thereupon gave notice to the Town Clerk of their intention to close, as the houses could not be put into good condition without “reconstruction.” This had to be admitted, for the buildings were in a most dilapidated and insanitary condition. Ultimately other accommodation was found for the tenants, and, as stated above, the houses were demolished.

In another case the owner of 6 houses with 9 tenants, on being served with a notice to comply with the Tenement Bye-Laws, and to carry out other works under the Housing Act, wrote to the Town Clerk requesting that a closing order be made, as the houses were too old and dilapidated to repair, or for the Bye-Laws to be complied with. No rent had been collected from the tenants for three months. The Health Committee agreed to make a closing order if other accommodation was found for the tenants. After much negotiation, some of the Bye-Laws were complied with so far as the planning of the houses would allow, and certain structural defects made good.

The rents in this case were two shillings and three-pence for two rooms, and five shillings for four rooms, and it will be seen that this class of tenant requires a house at a much lower rental than can be charged for the houses at present being erected.

Housing.

MINISTRY OF HEALTH TABLE.

YEARS ENDED 31ST DECEMBER, 1928 & 1929.

	1928	1929
Number of New Houses erected during the Year :—		
(a) Total (including numbers given separately under (b))..	994	1189
(b) With State assistance under the Housing Acts :		
(i.) By the Local Authority	588	841
(ii.) By other bodies or persons.....	406	348
1.— <i>Inspection of Dwelling-Houses during the Year :—</i>		
(1) Total number of dwelling-houses inspected for housing defects (under Public Health or Housing Acts).....	3672	4344
(2) Number of dwelling-houses (included under sub-head (1) above) which were inspected and recorded under the Housing Consolidated Regulations, 1925	737	1024
(3) Number of dwelling-houses found to be in a state so dangerous or injurious to health as to be unfit for human habitation.....	17	35
(4) Number of dwelling-houses (exclusive of those referred to under the preceding sub-head) found not to be in all respects reasonably fit for human habitation.....	2475	2646
2.— <i>Remedy of Defects during the Year without Service of formal Notices :—</i>		
Number of defective dwelling-houses rendered fit in consequence of informal action by the Local Authority or their officers	623	502
3.— <i>Action under Statutory Powers during the Year :—</i>		
A.—Proceedings under Section 3 of the Housing Act, 1925 :—		
(1) Number of dwelling-houses in respect of which notices were served requiring repairs.....	429	863
(2) Number of dwelling-houses which were rendered fit after service of formal notices :—		
(a) By owners	415	837
(b) By Local Authority in default of owners.....	..	..
(3) Number of dwelling-houses in respect of which Closing Orders became operative in pursuance of declarations by owners of intention to close.....	..	3
B.—Proceedings under Public Health Acts :—		
(1) Number of dwelling-houses in respect of which notices were served requiring defects to be remedied.....	1423	1281
(2) Number of dwelling-houses in which defects were remedied after service of formal notices :—		
(a) By owners	1384	1248
(b) By Local Authority in default of owners.....	..	..
C.—Proceedings under Sections 11, 14 and 15 of the Housing Act, 1925 :—		
(1) Number of representations made with a view to the making of Closing Orders.....	..	..
(2) Number of dwelling-houses in respect of which Closing Orders were made .....	..	..
(3) Number of dwelling-houses in respect of which Closing Orders were determined, the dwelling-houses having been rendered fit .....	..	..
(4) Number of dwelling-houses in respect of which Demolition Orders were made.....	..	..
(5) Number of dwelling-houses demolished in pursuance of Demolition Orders .....	..	..

Unhealthy Areas and Improvement Schemes.

During the year the 10 “unhealthy areas” were revised and supplemented by the addition of 9 others. These have been divided into four classes :—

Class A.—Definite areas for improvement schemes :— These (of which there are 9), contain 688 houses, 1,222 separate dwellings, with a total population of 4,751 persons.

Class B.—Large areas which may be divided into sub-areas, of which there are 3, further divided into 8 smaller areas. These contain 377 houses, 709 separate dwellings, with a total population of 2,993 persons.

Class C.—Insanitary areas, which contain a number of single houses or small groups of houses which could be dealt with by closing orders. There are two of these, containing 101 houses and 247 separate dwellings, with a total population of 976 persons.

Class D.—Individual houses in various parts of the City, which should be dealt with by closing orders. These number 143, containing 258 separate dwellings, with a total population of 1,026 persons.

These give a grand total of :—

	In Insanitary Areas.	Individual Houses.	Total.
No. of Houses	1,166	143	1,309
No. of Dwellings	2,178	258	2,436
No. of Rooms	3,764	457	4,221
Population	8,720	1,026	9,746

This inquiry revealed a very large amount of overcrowding and sub-letting, in addition to other insanitary conditions, or in other words. nearly 10,000 persons in the City are living in houses which do not approach the standard of fitness laid down by the Ministry of Health.

The application of the Tenement House Bye-Laws in many cases improves the individual conditions as to accessible water supplies and sinks, adequate sanitary arrangements, provision of ventilated food stores, washing accommodation, and lighting. In many instances, however, it is not possible to comply with all the requirements, owing to the planning of the houses, and in some there is the danger of partial collapse owing to alterations being carried out. The rents of some of these dwellings are excessive, varying from 8/- per week for one room holdings to 12/5 for three rooms.

To remedy these conditions the number of rooms required will vary according to which of the following standards is adopted :—

The Registrar General's standard of	
2 persons per room	4,873 rooms.
The Ministry of Health's standard of	
1·5 persons per room	6,498 „
The social standard (for the adequate	
separation of the sexes for sleeping	
purposes)	8,337 „

The Elswick East Terrace and Back George Street areas, reported upon in 1926, were ready for official representation by the Medical Officer of Health, but further action has been postponed pending prospective legislation in the Housing Bill No. 2, now before Parliament.

St. Peter's area and Cambrian Row (Vickers, Armstrong's) are also held up for the same reason.

The Newcastle-upon-Tyne Improvement Act, 1882, Section 32.

No houses were dealt with under this Section during 1929.

Houses Demolished, etc.—Apart from action by the Health Committee, 11 tenemented houses (of 43 holdings), and 18 self-contained houses have been demolished, or have ceased to be used as dwellings, for various reasons (dilapidations, conversion to business premises, etc.)

Houses built during the Year 1929.—The City Engineer reports that there were 348 self-contained houses built privately during the year under report. In addition, 841 dwellings were provided under housing schemes.

Tents, Vans, Sheds and Similar Structures.

At the end of 1928 there were 85 occupied living vans in the City, principally located in Bunton's and Jane Pit Yards, and Grey's Brickyard, Byker. These had been reduced to 22 at the end of this year, however. This has only been accomplished by the exercise of great forbearance and patience on the part of the Health Committee.

It was found necessary to take legal proceedings in 12 cases. These were adjourned from time to time to give the occupiers an opportunity of obtaining other accommodation. In some cases, however, no attempt was made to do so, and in February, 1930, 14 were forcibly removed from Grey's Brickyard, the property of the Corporation. All of them except one, which stood for a short time in the back street adjoining the ground, either left the City or obtained other accommodation. The exception referred to removed his van to an enclosed yard about a mile away, and after many ineffective warnings, he was summoned and fined 2/6.

The numbers of these dwellings have been reduced from 112 in 1924 to 22 at the end of 1929.

During the year 5 applications to place or keep vans on land within the City were received. All were declined. Without doubt the scarcity of houses is responsible for the great majority of van dwellers. If houses at a reasonable rental were available the vans would be vacated, for although in receipt of State relief, the occupiers manage to pay rentals ranging from 8/- to 10/- per week. The Church Army Housing Trust, which has taken one van dweller as a tenant, provides a self-contained house of four rooms, with every convenience, for 10/- per week. The Newcastle Housing Improvement Trust lets a two-roomed tenement, with bath, for 6/6.

Tenemented Houses.

The number of tenemented houses in the City is 3,490, containing 10,001 holdings, as follows :—

1 Room.	2 Rooms.	3 Rooms.	4 Rooms.	5 Rooms.	Total.
3,130	5,694	1,069	107	1	10,001

During the year 15,913 inspections of tenemented holdings were made.

Tenement Bye-Laws.

In addition to the unhealthy areas, 394 houses, comprising 1,020 separate holdings, were inspected and reported upon in detail during the year. Although owners and agents are showing more willingness to comply with notices served under the Bye-Laws, it was found necessary to report for legal proceedings in 198 cases ; 40 for non-compliance with the most difficult Bye-Law to work, viz., that requiring the provision of artificial light on common staircases. The total amount of fines only amounted to £6, the greatest amount of work being

carried out after the summonses were served, when they were withdrawn on payment of costs. In other instances the work was done on the owners being notified that legal proceedings were ordered. In some cases compliance with the bye laws is utilised as an excuse for raising the rent.

New Buildings and Sanitary Alterations.—400 plans were examined by the Medical Officer of Health before their submission to the Town Improvement and Streets Committee and, where necessary, suggestions forwarded to the City Engineer for his consideration, as compared with 370 during the previous year.

Common Lodging Houses.

The number of houses in the City is 37, as compared with 38 in 1928. Three were voluntarily closed and removed from the Register. Three applications were received for registration of new houses, two of which were granted and one refused. Registration was transferred to new keepers in 3 instances.

New Bye-Laws on the lines of the models issued by the Ministry of Health have been drafted, and are at present under the consideration of the Health Committee. Many innovations and improvements have been included which, if approved, will undoubtedly effect a marked improvement in such houses, and add much to the comfort of the lodgers.

As will be seen from the summary, lodging houses for men only are greatly in the majority. There is need of a good house for women, for there are only two of this class in the City.

The following summary shows in detail the accommodation as at the end of the year :—

Description of Lodgers.	No. of			Accommodation.			
	Houses.	Single Beds	Double Beds	Married Couples	Single Women	Single Men	Total.
Married couples and single women ...	1	24	6	6	24	..	36
Women only	2	67	..	..	67	..	67
Men only	34	1181	..	..	..	1181	1181
TOTAL.....	37	1272	6	6 12 persons	91	1181	1284

The total number of lodgers for which the houses are registered is 1,284, as compared with 1,332 at the end of 1928, showing a decrease of 48 in the total accommodation, due to the removal of 3 houses, the addition of 2 others, and a re-arrangement (giving increased accommodation) in one of the existing houses.

The average number of lodgers per night was 909, the highest number being 1,114, and the lowest 655.

REGISTERED COMMON LODGING HOUSES.

SUMMARY OF WORK DONE AND VISITS MADE DURING THE YEAR 1929.

Number of Houses on the register at the end of the year.....	37
Applications for registration (Newcastle Corporation Act, 1911, Sec. 63); 40 granted, 1 refused.....	41
Houses added to the Register.....	2
Houses ceased to be occupied as common lodging houses	3
Inspections made in the day-time	4,635
Inspections made in the night-time	193
Notices served { re washing of bed clothes, 148 }	222
{ re limewashing of houses, 74 }	
Contraventions of Bye-laws, etc. :—	
Structural defects in houses	8
Defective water-closets	19
Dirty water-closets	2
Defective roofs and defective or choked spouting.....	6
Choked W.C.'s and drains	22
Dust bins defective or insufficient	6
W.C.'s without a supply of water	1
Lack of efficient ventilation (broken sash-cords, etc.)	3
Beds not "aired" during prescribed hours.....	4
Unclassified minor nuisances	1
Deaths reported	2
Cases of infectious disease reported (measles 2, tuberculosis 5, erysipelas 2, epidemic cerebro-spinal meningitis 1).....	10

Factories and Workshops.

The inspection of these was well maintained during the year, 8,867 visits having been made. These included visits to workshops, "domestic" workshops, workplaces, laundries and bakehouses, and also to factories on receipt of complaint from H.M. Inspector. Generally speaking, their condition as regards sanitary accommodation, ventilation, cleanliness, water supply, and other matters of a hygienic nature is satisfactory.

During the year 66 lists of "outworkers" were received, 23 employers having sent in their lists twice, as required by the Factory and Workshop Act, 1901, and 20 employers only once. Included in the lists were 2 names and addresses of outworkers residing in other towns, and these, in accordance with the requirements of the Act, were forwarded to the Local Authority of the district concerned. In no case was any contravention of the Act found in any of the 68 outworkers' premises inspected.

The Home Work (Lampshades) Order, 1929, was issued by the Home Office on November 19th. It adds the manufacture of lamp shades—other than lampshades made wholly of metal or glass or stone—to the list of outworkers required to be kept by an employer under Sections 107 and 108, Factory and Workshop Act, 1901. So far as can be ascertained, there are no outworkers engaged in this industry in the City.

38 notices as to insanitary conditions in factories and workshops were received from H.M. Inspector of Factories, 22 of which related to factories (which are not visited by the Inspectors of the Health Department except on receipt of a complaint from H.M. Inspector), and 16 to workshops. Many of the latter, however, had been found and dealt with by the District Inspectors before the complaint was received. The others were dealt with and the necessary works carried out without having to resort to legal proceedings.

ADMINISTRATION OF THE FACTORY AND WORKSHOP ACT, 1901, IN
CONNECTION WITH FACTORIES, WORKSHOPS AND WORKPLACES,
DURING THE YEAR 1929.

Home Office Tables.

1.—INSPECTION OF FACTORIES, WORKSHOPS AND WORKPLACES. INCLUDING INSPECTIONS MADE BY SANITARY INSPECTORS.

PREMISES. (1)	NUMBER OF		
	Inspection. (2)	Written Notices. (3)	Occupiers Prosecuted (4)
Factories (Including Factory Laundries.)	259	271	None
Workshops (Including Workshop Laundries.)	7,091		
Workplaces (Other than Outworkers' premises.)	1,517		
Total	8,867	271	..

2.—DEFECTS FOUND IN FACTORIES, WORKSHOPS AND WORKPLACES.

PARTICULARS. (1)	NUMBER OF DEFECTS.			Number of Offences in respect to which Prosecutions were instituted. (5)
	Found. (2)	Re-medied. (3)	Referred to H.M. Inspector. (4)	
<i>*Nuisances under the Public Health Acts:—</i>				
Want of cleanliness	259	259	..	..
Want of ventilation	6	6	..	..
Overcrowding	1	1	..	..
Want of drainage of floors . . . . .	..	..	..	..
Other nuisances	66	66	..	..
†Sanitary accommodation { insufficient	13	12	..	..
{ unsuitable or defective	104	104	..	..
{ not separate for sexes	5	5	..	..
<i>Offences under the Factory and Workshop Acts—</i>				
Illegal occupation of underground bake-house (s. 101) . . . . .	..	..	..	..
Other offences (Excluding offences relating to out-work and offences under the Sections mentioned in the Schedule to the Ministry of Health (Factories and Workshops Transfer of Powers) Order, 1921.)	..	..	11	..
Total	454	453	11	..

* Including those specified in sections 2, 3, 7 and 8 of the Factory and Workshop Act, 1901, as remediable under the Public Health Acts.

† Sec. 22 of the Public Health Acts Amendment Act, 1890, is in force. The standard fixed by the Sanitary Accommodation Order (No. 89) of 4th February, 1903, is followed as a model.

OUTWORK IN UNWHOLESOME PREMISES, SECTION 108.

NATURE OF WORK. (1)	Instances. (2)	Notices served. (3)	Prosecu- tions. (4)
As per Home Office List.....	None	None	None

TRADES.

Particulars as to the number and nature of the various trades carried on in the workshops of the City:

TRADES.	Work-shops.	Domestic Work-shops.	Work-places.
Athletic Outfitters, etc.	12	..	..
Bacon Curing, Pickles, etc.	53	1	2
Bags, Waterproofs, etc. (making and repairing)	19	2	2
*Bakehouses	265	..	..
Blacksmiths, Plumbers, etc.	118	..	2
Bouquets and Wreaths (making, etc.).....	13	..	..
Boots, etc. (making and repairing)	130	25	..
Dressmaking, Underclothing, etc.	276	68	..
Drysalters, Cleaning & Packing Fruit, Tea, etc.	33	1	57
Furniture Making, Joiners, etc.....	217	7	..
Harness, etc. (making and repairing)	25	..	..
Jewellery, Watches, etc. (making and repairing)	75	2	..
Laundries.....	21	..	..
Machines and Tools (making and repairing)..	146	3	3
Painters, Engravers, Photographers, etc.....	89	3	11
Restaurant Kitchens, etc. ....	..	..	117
Tailoring, Shirts, etc.	269	36	..
Miscellaneous	104	..	92
Totals	1,865	148	286

* Includes 35 " Factory " and 98 " Domestic " Bakehouses.

Inspection of Council and Other Schools.

During the year 117 inspections of schools were made and only three minor defects were found, which when brought to the notice of those responsible were promptly remedied.

It is to be regretted that the Education Authority has not continued the good work of removing the objectionable "trough" water-closets which still exist in many of the older schools, and providing instead independent water-closets.

Rag Flock Acts.

There are no manufacturers of Rag Flock or persons solely dealing in that commodity, the principal users being upholsterers and bedding makers, who number 36. Six samples were taken, all of which were certified to conform to the standard of purity required by the Regulations. 72 visits were also made under the Factory and Workshops Act, 1901.

Exhumations.

During the year 3 exhumations were carried out under the supervision of the Health Department, 2 of these being authorised by the Home Office and 1 under a Faculty from the Bishop. In one instance re-interment took place in the same cemetery, the remains in the other two cases being removed for burial elsewhere.

The operations were carried out in the early morning, and were conducted in a sanitary and reverent manner.

Agricultural Produce (Grading and Marking) Act, 1928.

This Act provides for the grading and marking of agricultural produce, the grading and marking of eggs produced in England and Wales, and also for the marking of preserved eggs. Three premises were registered for cold storage or chemical storage of eggs, in accordance with Section 4 of the Act. These were regularly visited, and no contravention found.

360 inspections have been made to shops, stores and market stalls with reference to the marking of eggs, and no contraventions have been found. In one case, however, information was received that a man was selling from door to door during the evenings what he stated to be "fresh country eggs, direct from my own farm," but which were undoubtedly foreign eggs, from which the mark of origin had been removed. This was confirmed by the Analyst. Legal proceedings were taken against the vendor, who was fined £2.

NEW LEGISLATION.

Artificial Cream Act, 1929.

This Act, which came into force in June, is to prevent the sale of “artificial cream,” which is usually prepared by emulsifying butter, dried skimmed milk and water, from being sold as natural cream. It briefly provides that it shall not be sold unless designated “artificial cream.” Receptacles used for conveying such cream must be labelled “artificial cream” in large and legible type. With certain exceptions, premises where “artificial cream” is manufactured or sold must be registered with the Local Authority, and it is laid down that where an article having the composition of cream or “artificial cream” is sold on premises so registered, it shall be presumed to be artificial cream, unless the contrary is proved.

The penalty for contravention is £5 for the first offence, £50 for the second or subsequent offences, and a further fine of 40/- for a continuing offence.

Changes in the Staff.

In April Inspector Black resigned on being appointed Assistant Inspector to the River Tees Port Sanitary Authority, in August Inspector Phillips was transferred to the Veterinary Officer's section of the Department, and in November Inspector Hardie retired on superannuation. The vacancies thus caused were filled by the appointment of Daniel Wood, Albert French, and John H. McAdam.

I am, Sir,

Your obedient servant,

C. RAIMES,

Chief Sanitary Inspector,

Inspector of Common Lodging Houses, etc.

Health Department,

Town Hall,

30th June, 1930.

APPENDIX.

City and County of Newcastle upon Tyne.

Memorandum by the Medical Officer of Health on the Medical Work under the Local Government Act (1929).

The organisation of the change of administration resulting from the above Act is difficult, delicate and far-reaching. Among other consequences of the Act, the Voluntary Hospital system will inevitably undergo profound changes, it may not be at once, but certainly they will soon become evident. Arrangements therefore should not be made independently for the carrying on of the new municipal undertaking, but a close understanding should be established between the Local Authority and the larger medical charities and organisations operating within the area, through the medium of the Standing Advisory Committee set up for the purpose under Section 13 of the Local Government Act, 1929, in order that all available hospital accommodation within the area may be utilised to the best possible advantage.

The following statement, which deals with the question, should not be regarded as intended in any sense to be final, but its purpose is to indicate some at least of the main points of principle which require careful consideration. Much closer investigation will have to be made into every detail of the scheme before final decisions can be arrived at.

HOSPITAL POLICY.

Under the Local Government Act there is transferred to the Municipalities of County Boroughs and County Councils responsibility for all medical services hitherto administered by Boards of Guardians. Owing to the social differences created by the laws governing this administration, the result has been the development of a system which, to a considerable extent, reduplicates and overlaps that provided by voluntary efforts. The Poor-Law medical services have suffered severely from a policy of rigid economy, almost amounting in too many cases to actual repression, which the more enlightened Boards have been doing their utmost to prevail against. These latter have been most successful in their steady improvement of the larger infirmaries, some of which, notably in London, are as well equipped as good voluntary hospitals. In the provinces progress has not been so rapid, although in some hospitals, such as Wingrove, great advances have been made, particularly in equipment, and to some extent in personnel. In regard to the latter, the medical staff is generally quite insufficient for the needs. At Wingrove Hospital, for example, while of excellent professional quality, it falls far below requirements numerically to do bare justice to the patients who occupy its 643 beds. The Newcastle Board of Guardians has shown itself more than anxious to remove from the inmates the Poor Law stigma, and has endeavoured to popularise Wingrove by encouraging the admission of private paying patients, but nevertheless, comparatively few poor persons who can, when ill, obtain admission to the voluntary hospitals, as yet enter Wingrove. Thus it comes that a very large proportion of its patients are of the type, medically and otherwise, who are not readily accommodated elsewhere. Meanwhile the voluntary

hospitals are grossly overcrowded, have long waiting lists, and are also in lack of funds to increase their accommodation.

Obviously then, if the best is to be obtained from the hospitals of the area, not only must they be developed on similar lines of staffing and equipment, but they must be co-ordinated so as to avoid unnecessary overlapping and reduplication of provision and of effort. A close understanding should be arrived at with, for example, the Royal Victoria Infirmary, so that in the Wingrove Hospital, if additional staff were needed, there might be interchange of personnel between the two institutions. To ensure the highest efficiency of medical work, an arrangement should be arrived at whereby the wards of Wingrove Hospital are made available for teaching purposes for medical students in the same way as at the Infirmary, for there is nothing that keeps staff up to a high level of endeavour like having to train others. It might be possible, for instance, that the Professors of Medicine and Surgery, or other consultants of high standing, might be attached to the Hospital as consultants. The present medical staff would continue as at present, and in whatever scheme may be adopted, the position of the medical superintendent would be safeguarded. He would be the administrative head of the hospital. For future appointments of medical staff it would be highly desirable that nominations to the Health Committee should come through an independent medical committee who would be the best able to judge of the professional merits of aspirants.

The obligation upon the Corporation to recover, as far as possible, the cost of maintenance and treatment from all patients will have an inevitable repercussion

upon the voluntary hospitals. If they do not make similar charges, they will be overwhelmed with patients. This, therefore, affords a further strong reason for close co-ordination.

Wingrove Hospital already possesses excellent operating theatres, and a large modern block of six wards, containing about 150 beds. Of these, the top two are at present occupied by tuberculous cases, which might be transferred to the Advanced Case Pavilions at the City Hospital, or, if suitable, to Barrasford Sanatorium.

It is suggested that two wards might be set aside for acute medical cases, and two others for acute surgical cases, as is done at present. The visiting staff for these wards would consist of a physician consultant and surgeon consultant, as suggested above, together with an assistant physician and an assistant surgeon, who are practising purely as physician or surgeon. As at the Royal Victoria Infirmary these should be assisted by a medical registrar and a surgical registrar with a sufficient staff of resident house physicians or surgeons, the last named being appointed, as at the Royal Victoria Infirmary, for a short term, *e.g.*, six months. The remaining beds might be utilised for surgical cases of tuberculosis, for which there is very insufficient provision in Newcastle.

The Hospital already contains a very large number of cancer cases, operable and otherwise, and a definite comprehensive plan should be adopted for dealing with this disease, in consultation with the Voluntary Hospitals Committee. The commission to control the distribution of radium may desire first of all to have the local position very closely studied to ensure that not more than one hospital is doing the work in the area, and that the radium

is being used to the best advantage. It will have to be decided, therefore, whether the treatment of cancer is to be carried out in a municipal or a voluntary hospital, and as to how interchange of cases is to be organised.

As Wingrove Hospital entirely lacks facilities for clinical pathology and bacteriology, and has to contract for examination of its material outside—a very inconvenient and partial arrangement—a pathologist should be appointed immediately, and the necessary laboratory accommodation and equipment should be provided.

Reorganisation and development as suggested is likely to be followed by a gradual steady increase of patients, for whom accommodation will have to be found. At first, at least, this might be effected by the transfer of the chronic senile cases elsewhere. These do not require constant urgent medical attention, and might be served by a part-time medical officer, or placed in some part of the adjoining Institution and looked after by the resident staff of the hospital. They largely occupy now 11 wards of 270 beds in the older sections of the hospital. These wards are not modern, and in design are not too satisfactory, especially those which are below ground level. Fortunately, there is ample room for extension northwards, behind the modern block.

Of the other modern blocks, that containing the Maternity Wards has 13 beds. It is fairly satisfactory, though somewhat cramped, and deals with about 120 confinements a year. Some of these are of women of the more degraded class, but 67 per cent. are stated to be married women, and 10 per cent. pay for their maintenance. It is a question whether confinements should continue to be taken here, or transferred to the Princess Mary Maternity Hospital, centralising there all institutional

maternity work for the City. Some readjustment of financial arrangements with that hospital would probably be necessary.

Behind the Maternity Block, on the west boundary, is the Isolation Block, accommodating 32 female venereal cases, and 27 children suffering from infectious skin ailments.

Beyond that again is the Casual Ward for vagrants, who require medical inspection only, and stay in on an average for two nights. There would appear to be no good reason for the retention of this class of person on the hospital premises.

An old stone-built villa to the west of the hospital entrance gate is occupied by about 50 men—aged and infirm. Its conversion to the purpose of a maternity home is now under consideration.

A villa on the opposite side of Westgate Road (Highfield) is used as a Maternity Home and Nursery. It accommodates about 30 mothers and infants, and is usually fully occupied.

There is besides the new Nurses' Home, with accommodation for 150 nurses and the domestic staff, *i.e.*, 50 in excess of the present staff. Wardmaids are women engaged by the day in lieu of relief.

At present heat, hot water, laundry and baking are provided from the adjoining institution, an arrangement that is economical for both.

In addition to arrangements for the collection of charges for maintenance and treatment of patients, there must not be forgotten an efficient almoner service for after-care.

Consideration should also be given to the avoidance of delay in admission of patients to hospital, and the simplification of the present machinery, which is apt on occasions to introduce difficulties that are to the disadvantage of the patient.

Wingrove Hospital is within the same curtilage as the Poor Law Institution, the latter being entirely composed of original buildings. Heat, hot water supplies, baking and laundry services and general repairs for both establishments are in common, but each has its own separate entrance from Westgate Road. There would appear to be no reason why the two establishments should not be administered by separate Committees, that administering the Institution contracting with the Health Committee for the common service referred to.

The Institution is occupied by able-bodied persons, and by aged and infirm, the latter class requiring intermittent medical attention or surveillance with occasional transference to the hospital. To what extent accommodation in the Institution might be added to the Hospital, *e.g.*, by transfer to some other place of the able-bodied and the casual classes who are the present occupants, is at this stage difficult to say, although it is questionable whether the accommodation so released will be suitable for hospital purposes. If and when additional hospital wards are required the better course would seem to be to build an extension on the farm land behind the present new Hospital Block.

DOMICILIARY MEDICAL SERVICE.

Attendance on the ailing poor is by salaried part-time medical appointments. Remuneration, even with

additional grants given, as a rule grudgingly, after periods of great pressure of work on the medical officers concerned, has always been so low that this service has become an absolute by-word in the profession. Since the doctor has also to provide the greater part of the medicaments and dressings required, it is difficult to understand why any practitioner of standing undertakes the work at all. Obviously, since even a doctor must make a living, the poor have not always been assured either of regularity or adequacy of attendance, and the deterrent effect of the Poor Law has been only too evident in this branch of its responsibilities. It is only fair to say of most of the doctors engaged, that on the whole the attendance has been given ungrudgingly and irrespective of personal gain or loss. Nevertheless, the "parish doctor" is only too often regarded with suspicion, and that is entirely due to the system.

To increase salaries is not necessarily to effect an immediate rectification, since differentiation between the Poor Law patient and others has become well-nigh ingrained. These people are after all human beings, and the same standard of medical care should be available for them as for the more fortunate. The appointment of whole-time medical officers—who will almost certainly be juniors, or unsuccessful practitioners—is open to the objection that it again differentiates between the poor and others. It is therefore submitted that the proper way to deal with the question is to give the poor their choice of any doctor willing to do the work, on payment by the Local Authority of a fee equivalent to the average produced by the National Health Insurance capitation fee in the district, the doctor keeping his case records similarly to those of his panel patients.

It would be well to consider the position of the Newcastle Dispensary, which is doing exactly similar work, and explore the possibilities of co-ordinating it.

PUBLIC VACCINATION.

This is carried out by specially appointed practitioners paid by fee. A similar arrangement to that described above would appear more appropriate, but the Ministry of Health, which supplies the Public Vaccinators, and these only, with Government lymph, of the effects of which, as of the method of inoculation of it, the Ministry keeps close observation, is likely to object to any other arrangement.

A continuance of the present system, but with transference of supervision to the Health Committee instead of to the Poor Law Authority, is likely to continue. Pressure is being exercised by the medical profession upon the Ministry to make Government lymph available to all. This is hardly likely to be conceded, yet at least, in view of the difficulty of control involved.

MEDICAL WORK UNDER THE GUARDIANS WHICH HAS IN FUTURE TO BE UNDERTAKEN BY THE CORPORATION, THROUGH THE HEALTH COMMITTEE.

SUMMARY.

A. Provision and management of Institutions for :—

(1) Patients needing continuous medical or surgical treatment (Hospital patients) :—

(a) Suitable for general wards—

IN WINGROVE HOSPITAL, AND BY CO-ORDINATION WITH VOLUNTARY HOSPITALS ADVISORY COMMITTEE.

(b) Requiring special wards, *e.g.*, delirious, venereal, tuberculous and other infectious patients—

IN WINGROVE HOSPITAL AND AT THE CITY HOSPITAL (VENEREAL CASES ARE ALSO TREATED AT THE ROYAL VICTORIA INFIRMARY, WHICH SHOULD REMAIN THE OFFICIAL VENEREAL CLINIC).

(c) Requiring specialised treatment, *e.g.*, orthopædic, ophthalmic, aural, laryngological, dermatological, and other patients—

AT SPECIAL DEPARTMENTS OF ROYAL VICTORIA INFIRMARY.

(2) Maternity patients and newly born infants :—

(a) Normal.

(b) Complicated.

(c) Septic.

(d) Venereal.

(a) and (b) AT PRINCESS MARY MATERNITY
HOSPITAL.

(c) Do. Do. or WINGROVE.

(d) AT WINGROVE OR ROYAL VICTORIA
INFIRMARY.

- (3) Non-mental patients needing institutional treatment because they are suffering from some chronic disease, also for aged, infirm persons whose medical and nursing needs approximate to those of chronic patients (Infirmary patients) :—

WINGROVE HOSPITAL AND THE POOR LAW
INSTITUTION.

- (4) Mental patients :—

(a) Defectives from an early age, and
Epileptics :—

Children	{	trainable.	}
Adults			

? SHOTLEY BRIDGE. CITY MENTAL
HOSPITAL.

- (5) Healthy infants (0-3) (excluding those still in the maternity wards). (Nursery infants) :—

NURSERY AT WINGROVE. ? NURSERY
SCHOOLS.

- (6) Healthy children (3-16) :—

PONTELAND HOMES.

- (7) Convalescents in special homes : —
?

- (8) Adults in health and others not in need of medical supervision, *i.e.* :—

(a) The aged.

(b) Cripples not bed-ridden.

(c) Casuals.

(d) Others, *e.g.*, the blind.

- (a) POOR LAW INSTITUTION.
- (b) INCURABLES HOSPITAL.
- (c) POOR LAW INSTITUTION.
- (d) ?

B. Medical out-relief :—

SEE DOMICILIARY MEDICAL SERVICE,
page 7.

C. Vaccination :—

SEE PUBLIC VACCINATION, page 9.

D. Supervision of Boarded-out Infants and Children
under the Children Act and otherwise :—

BY MATERNITY AND CHILD WELFARE
SECTION OF HEALTH DEPARTMENT. (Over
age of 5 by Education Dept. ?)

For the discharge of some of these functions
medical advice is needed only occasionally, *e.g.*,
for the medical examination of casuals and for the
classification and occasional treatment of the
aged and of cripples :—

THIS COULD BE CARRIED ON AS AT PRESENT,
BY THE WINGROVE HOSPITAL STAFF, OR
BY A VISITING PART-TIME MEDICAL
OFFICER.

H. Ferr.

Medical Officer of Health.

HEALTH DEPARTMENT,
TOWN HALL,
NEWCASTLE UPON TYNE.

29th October, 1929.